

MARCH, 1958

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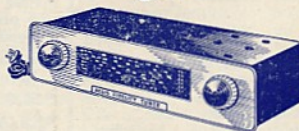
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SCR522 Receivers, less valves £5

SCR522 Transmitters, less valves £5

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915 Kc. and 455 Kc. Crystals £3 each

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Amateur Band Crystals, any frequency £2

Gold Plated Marker and Commercial Crystals, price on request. Delivery in seven days.

List of Crystal Frequencies appeared in last month's advert.

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No. 11 Genemotors, Low Power £2

No. 11 Genemotors, High Power 17/6

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Screwdriver Roll-up Kits, well known make. Contains three Standard, two Recessed Screwdrivers. Bargain 15/-

P.M.G. Key Switches, two-way 10/0

AR8/AT5 Cables, 12 ft. long 10/0

Type "S" Power Supply, 230 volt AC. Good condition. Personal Shoppers only £25

AT21 Power Supply, 230 volt AC. Good condition £25

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English Filter Chokes, small type, 40 Ma., 100 ohm resist. 3/6

AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

EDITOR:

J. G. MARSLAND, VK3NY.

TECHNICAL EDITOR:

K. E. PINCOTT, VK3AFJ.

NOTES EDITOR:

V. M. JONES, VK3YE.

TECHNICAL STAFF:

J. C. DUNCAN, VK3VZ.

D. A. NORMAN, VK3UC.

R. S. FISHER, VK3OM.

ADVERTISING REPRESENTATIVE:

BEATRICE TOUZEAU,
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EDITORIAL



High Power and Component Parts

After the cessation of hostilities at the end of World War II, millions of pounds worth of surplus equipment became available on the disposals market—equipment which in normal times would be beyond the financial means of the average Amateur—and amongst this "gold mine" was equipment and components built to magnificent standards but in many cases well above the ratings required for the construction of Amateur phone and c.w. transmitters with the maximum input permitted to be used by the Australian Amateur.

No one can criticise the man who designs his equipment with a good margin of safety, indeed he is to be congratulated, not only for providing safety, voltage wise and insulation wise for himself, but for others who might come in contact with his equipment also. But the regulations governing the operation of Amateur stations did not provide for the use of such components particularly, which when used together could exceed the licensed maximum input, and the result was that many Amateurs who purchased this equipment were in trouble with Radio Inspectors from the Postmaster-General's Department who regularly inspect Amateur stations in accordance with the Wireless Telegraphy Act in the same way that commercial stations are inspected, and currently television stations also.

The Wireless Institute of Australia made representations on behalf of licensed Amateurs for a clear-cut policy on this matter and agreement was reached with the Wireless Branch of the Postmaster-General's Department that a combination of high power rating components could be used providing the licensed maximum input to the final stage of a transmitter could not be exceeded by other than a major modification to the installation. Despite this, there have been cases where Departmental Inspectors have continued to enforce the earlier regulation to the embarrassment and confusion of the Amateurs concerned. This will now cease! The Handbook for the Guidance of Operators of Amateur Stations is being reprinted and will shortly be available to

Amateurs through the usual Book-sellers or direct from the Postmaster General's Department. Other concessions granted to Australian Amateurs due to W.I.A. representations will be included and it is every Amateur's duty to obtain a copy and keep it handy at his operating position in the "shack".

Concerning the use of high power components, Paragraph 62 of this Handbook reads as follows:—

"Transmitting apparatus installed in an Amateur Station must be operated in such a manner as not to exceed the power authorised. Single components such as valves, transformers, etc., capable of handling power in excess of that licensed are permitted without restriction in Amateur Station transmitters, but where a combination of such components is in use a method satisfactory to the Department must be employed to ensure that the d.c. power input to the anode of the final transmitter stage cannot exceed that authorised. For example, power supply transformer tapings should be arranged in such a way as to obviate without a major alteration the possibility of an increase of voltage beyond that necessary to supply the licensed power."

Unlike operators of bushfire fighting transmitting equipment, fishing craft and other small ships transmitters, taxi services, etc., the Amateur is a qualified technical person in his own right and is a licensed member of a recognised transmitting service. This service has never let the country down during times of either Civil or National emergency and with its members' "know-how" equipment is designed and constructed in accordance with any regulations or specifications.

Let us keep it this way! Paragraph 62 permits you to construct and operate your equipment to standards previously unobtainable. Don't abuse it! Those who do cannot expect the assistance or sympathy of the W.I.A. Administration. The old "bogy" of the use of high power components is now history. It will be kept that way for the betterment of Amateur Radio. The way it is kept is up to you—the licensed Amateur.

FEDERAL EXECUTIVE.

AMATEUR TELEVISION

PART ONE

BY E. E. CORNELIUS,* VK6EC/T

WITH the commencement of Television in N.S.W. and Victoria, and its extension to the other capital cities in the next year or so, an upsurge of interest in Amateur Television may be expected. A broadcast service means receivers, and a simple converter on the front end of a standard t.v. receiver provides one end of an Amateur circuit. All the commercial components available are designed around our 625 line system. A broadcast service too, can be pressed into service to provide the Amateur's source of synchronising signals.

For these reasons therefore, I suggest that Amateur t.v. in Australia should concentrate on 625 line standards, with both video and sound paralleling the broadcast service. The sound carrier should be 5.5 Mc. above the vision carrier, f.m., with 50 Kc. deviation. Then any commercial receiver, or home-brew either for that matter, can be pressed into service as a high quality monitor, or Amateur receiver.

This series will describe equipment for 625 lines, to Australian standards. The lowest, and therefore easiest band on which we may operate is 233 to 236 Mc. I therefore recommend that we set up a standard t.v. channel within that band—

i.e. Vision carrier 290.25 Mc.

Sound carrier 295.75 Mc.

With vestigial sideband transmission, the video does not extend below 289 Mc., leaving one megacycle of the band undisturbed. The transmitter to be described conforms to this plan.

The basic equipment needed can most easily be shown by the block diagram in Fig. 1. Variations of the scheme will be elaborated as each unit is described.

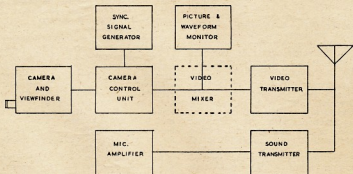


FIG. 1 - BLOCK SCHEMATIC-CAMERA CHAIN

Vidicon type camera tubes are now available at reasonable cost. They are satisfactory for Amateur use. Cost—approximately £A38 landed here.

With this tube, the Amateur can build a simple t.v. transmission chain, or can make elaborate equipment approaching commercial broadcast standards. For a

start, a flying spot scanner will serve to generate signals from transparencies, slides or film negatives. But soon the desire for "real pictures" will develop, and a camera will be projected. The method for obtaining one of these tubes will be outlined in Part Two.

This series of articles will be built around specific circuits, which work well, and can be duplicated if you wish.

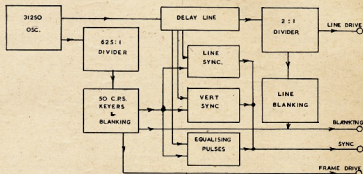


FIG. 2 - SYNC. GEN. BLOCK SCHEMATIC

Some of the data is basic, while some will be subject to your own convenience, pocket and what you have. The results obtained with the equipment to be described are in conformity with Australian commercial standards, with full 5 Mc. video bandwidth. To obtain this the equipment is fairly ambitious, but simplifications will be outlined, but with correspondingly lowered performance.

10 tubes uses 8kv. e.h.t. for a bright picture under any lighting conditions. Full instructions for making all camera magnetic components will be included.

3. **Camera Control Unit**—with 5FP7 pix monitor, and VCR139A waveform monitor. Output 1.4 volts composite video with sync. and blanking, ready for transmission.

4. **Video Mixer** enabling four picture channels to be mixed, and also inserting blanking and sync. With minor additions, this unit may be used in place of the camera control.

5. **Master Monitor** with a 12" picture monitor, using a VCR140, and simultaneous twin waveform monitors at both line and frame rates, using 5FP1s. Pulse cross display facilities are provided, and it can be used as a transmitter monitor, with detector diode and amplifier. Input required is 1.4 volts composite video.

6. **Video Transmitter** on 290.25 Mc., with 10 watts peak white output from a QEO3/12, vestigial sideband filter, and broad band antenna with 10 db. gain.

7. **Regulated Power Supplies**—These are a must for most units.

8. **Video Oscilloscope**, grating generator, test charts and testing methods.

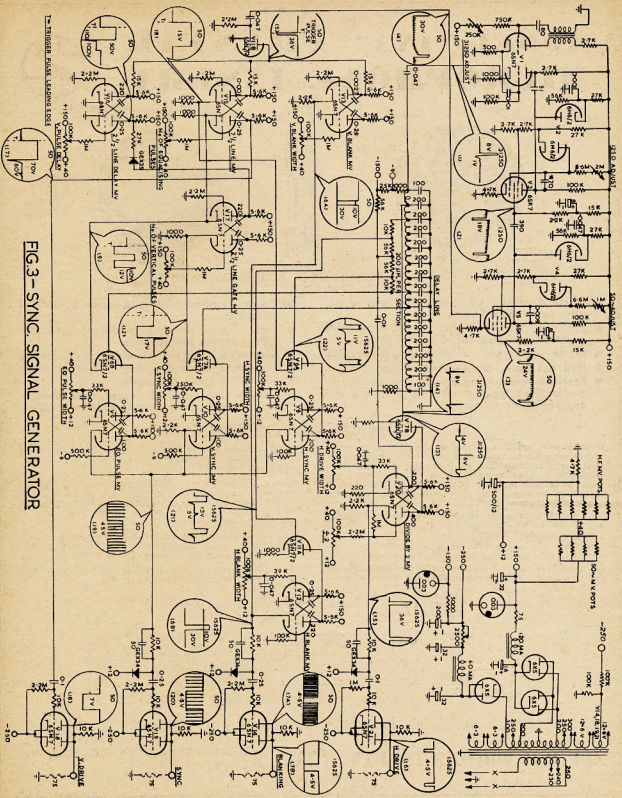
Before attempting to build a camera, other equipment will be needed, and the total number of tubes required will be considerable. I will describe fairly complex equipment with performance to C.C.I.R. standards, that you can duplicate if you wish. I will also show simplifications, although performance will suffer somewhat.

But you can make good pictures with comparatively simple equipment so do not be alarmed at the complexity of that described, as they have been designed to duplicate all broadcast t.v. functions, and much is not essential, although perhaps desirable.

To duplicate the equipment described is a project for a couple of years of work, but Amateur t.v. lends itself to club or community effort. A group of

*187 Wood Street, Inglewood, W.A.

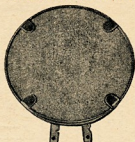
FIG-3-SYNC. SIGNAL GENERATOR



MODEL "1XA" CRYSTAL MICROPHONE INSERT



AUSTRALIAN MADE — — FOR AUSTRALIAN CONDITIONS



FITTED WITH PLATED REAR SHIELD TO ELIMINATE HUM PICK-UP

- Patented crystal unit guarantees outstanding efficiency and performance.
- Protected against ingress of moisture with approved moisture sealed crystal element.
- Small — compact — lightweight — durable.
- Will not blast from close speaking.
- Precision engineering ensures realistic reproduction and high output with long life and dependable operation.

- The only unit available with a genuine sintered metal filter.
- Good high frequency response ensures excellent speech reproduction.
- Aluminium diaphragm mechanically protected and frequency controlled by "Zephyrfil" filter.
- Australian made throughout.
- Only carefully selected cements used throughout, to suit Australian climatic conditions.

TECHNICAL DETAILS

Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyrfil" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved.

Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

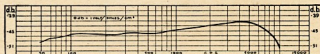
When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars, being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case $1\frac{1}{2}$ " diameter (rear), $\frac{3}{8}$ " thickness, 1-13/16" overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.
Output Level = -45 db (0 db = 1 volt/dyne/cm²)
Impedance = Model 1XA Grid 1 — 5 megohms.



Approximate Frequency Response Curve

AVAILABLE FROM ALL LEADING TRADE HOUSES

ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VIC.
Phone: BL 1300

two, three or more Amateurs can build a system in reasonable time, and share the work and expense. The simpler equipment is well within the capabilities of the average man.

THE SYNCHRONISING SIGNAL GENERATOR

This is the heart of the system, generating accurately timed pulse trains to hold all transmitting equipment in exact synchronism, and provide the transmitted sync. signal for all receivers. See Fig. 2.

There are four outputs:—

1. Line drive, for all line time bases and keyed clamps at the transmitter end, at 15,625 pps. of 5.6 μ sec. duration, leading sync. by 2.8 μ sec.
2. Frame drive for all transmitter frame time bases, 50 pps. of 7½ lines duration.
3. Composite blanking for blanking of flyback in all picture tubes except the viewfinder. Line duration 11.6 μ sec. frame 18 to 22 lines.
4. Composite sync. for transmission with the blanked picture signals for sync. separation in all receivers. To Australian specifications.

It is easy, but not always convenient, to extract composite sync. from a sync. separator operating on a broadcast transmission. A good sync. separator will extract clean sync. signals, and these may be used to synchronise free running time bases in the camera, etc. Alternatively, the sync. can be used to control blocking oscillators or multi-vibrators which will generate line and frame driving pulses for use by driven time bases. Combining the two pulse trains will give a composite blanking pulse train, but the front porch will require more complex circuitry.

The sync. generator whose circuit is shown in Fig. 3 uses a 6SN7 (V1) as a free running blocking oscillator, and buffer feeding a delay line for timing of the equalising, line sync., line drive, line blanking and field sync. pulses. The buffer also feeds a 625 to 1 frequency divider, V2, 3, 4 and 5, using two phantastron circuits, each dividing by 25. The second phantastron delivers 50 c.p.s. pulses (4), which are used via a buffer (V11B) to trigger the three 50 cycle multivibrators V13, 15 and 16. The waveforms shown on the diagram are numbered, and will be referred to by the number in brackets as (4) above. The frequency of the pulse train is shown at the top of each oscillogram.

Composite Blanking

On receipt of the negative 50 cycle trigger pulse (5) from V11B, V13B is cut off, V13A conducts and a positive pulse (6A) is emitted from the cathode. That is the field blanking pulse, and is adjusted to from 18 to 22 lines duration.

Similarly, V14 receives positive triggers (21) from the delay line at 31,250 pps. This pulse is altered by sitting on a 15,625 pps. pulse from V20, via the resistor network. Only the alternate pulses will overcome the bias of V11A, causing it to conduct, and the negative trigger from its plate, cutting off V12A, causes V12B to conduct, and emit a train of line blanking pulses (6B). Their duration is adjusted to 11.6 μ sec.

The common cathode connection to V13A feeds composite line and field blanking pulses to the diode clipper

and the output tube V14. This tube is normally cut off, with anode at earth potential, but on conduction at each input pulse, a 4 volts negative pulse train is delivered to a 75 ohm load (7A) (7B).

Composite Sync.

Tube V15 (a) provides field driving pulses to the vertical drive output tube V18.

(b) In co-ordination with V17, the 2½ line gate MV, and V16, the vertical pulse delay MV, keys in 5 pre-equalising pulses, and 5 post-equalising pulses in the composite sync. circuit. This is done via V6B, the equalising pulse gate, which allows the equalising pulse MV (V9) to operate only while its cathode is not positive, i.e. when V15B and V17A are cut off. The sequence is as follows:

V13B, V15B and V16B are normally conducting, V15B cutting off V6B the equalising gate, and paralysing V9, the equalising MV. The negative trigger pulse from V11B cuts off V15B, allowing V6B to conduct, opening the gate to the 31,250 pps. triggers from the delay line to V9, which then generates equalising pulses.

At the same time V15A conducts, its cathode runs positive (8), cuts off V6A, the sync. gate, and closes down the line sync. MV (V8). Also at this instant, the 50 pps. trigger pulse cuts off V16B, readying it for cycling 2½ lines later. At the end of 2½ lines (5 equalising pulses), V16 cycles, V16B conducts again, its plate going negative, and via the diode, cutting off V17B, allowing V7A to conduct, gating in the vertical sync. pulses, and gating out the equalising pulses via V17A and V6B (9).

After 2½ more lines, the vertical sync. period, V16 restores to normal, gating out the vertical sync. pulses, and gating in equalising pulses again. After a total of 7½ lines, V15 cycles, V15A cuts off, V6A conducts, and the horizontal sync. MV starts up again until the next trigger.

The sequence thus is, horizontal sync. pulses till the trigger, then 5 equalising pulses, 5 vertical sync. pulses, 5 equalising pulses, and then the sync. pulses again. All done by the common cathode connections of the enabling MV's, and the gates, V6A, V6B and V7A. A common cathode connection between the H. sync., V. sync., and equalising multivibrators, goes to the composite sync. output tube (19), clipping in the GEX34, and the output tube grid, with the sync. train available at the anode of V19, at 4 volts p/p. in 75 ohms, negative going (20). No coupling capacitor is needed, as the tube is normally cut off at grid current bias, and the anode at earth potential.

The line sync. MV (V8) gets its triggers similarly to the blanking MV, but via V6A, at 15,625 pps. (22). The equalising and vertical sync. MV's get their triggers direct from the delay line at 31,250 pps., via V7A and V6B. The pulses are adjusted to correct durations by the corresponding potentiometers in the MV grid circuits.

Line Drive

The line driving pulses at 15,625 pps. should precede blanking and sync., to overcome camera cable delay, so triggers are fed from the first tapping on the delay line (14), via V7B to the

grid of V20A, normally cut off. This MV has constants such that it will not cycle at trigger rate of 31,250 pps., but will do so at 15,625 pps. The potentiometers are adjusted for correct division, to line rate, and for correct driving pulse width, from 4 to 7 μ sec. (15). This driving pulse train is delivered by output tube V21 (16). The drive pulses are also fed back to the resistor network in the delay line, for addition to the 31,250 pulses, to provide the trigger pulses for the line sync. (22) and line blanking MV's (21).

Frame Drive

An output of the 7½ line MV (17) is used for frame drive, via its output tube V18 (18).

SIMPLIFICATIONS

This unit will deliver outputs to C.C.I.R. standards. For Amateur work this is not vital, and the whole of the composite sync. circuit can be omitted. The receiver will then trigger from the blanking pedestals, but with a tendency to picture "tearing" at the top, and erratic interlace due to lack of serrations in the vertical sync. pulse, and consequent pulsing.

It will then be necessary to retain V1 to V5, the divider chain, V11, 12, 13 and 14 for blanking (and sync.). V13 can feed V18 for frame drive. The delay line can be omitted, but V20 will be required for 2:1 division. It may be feasible to combine the functions of V20 and V12. V20 will give line drive, as before.

CONSTRUCTIONAL

There are no tricky parts in the construction, although the delay line may be unfamiliar. This consists of 14 identical inductors of 200 μ H. each, in series, 1" apart, on a 1" dowel. The tapping points are shunted to earth by 200 pF. capacitors, with each end shunted by 100 pF. The delay per section is \sqrt{LC} (μ F., μ H. sec.) = 0.04 μ sec. Mine were wave wound, but you could scramble wind in slots in a 1" former (about 120 turns each). Match these windings, and mount the whole unit in a shielding box. The 200 pF. capacitors should be matched to 2% or better, but the actual value could be anywhere from 180 to 220 pF. For 200 pF. and 200 μ H. the impedance of the line is 1,000 ohms. For other values it is $\sqrt{L/C}$, and best obtained by experiment after assembly. Feed 31,250 pulses to the line, and bridge a c.r.o. across the input to the line. Fit a carbon potentiometer of 5,000 ohms as termination. Vary this for the cleanest pulse display, measure its value, and fit a fixed resistor of the same value.

The blocking oscillator transformer for the master oscillator can be a line b.o. transformer from a receiver. This may need damping with a resistor across the secondary, to prevent a damped wave train from following the output pulse. As there is a lot of meat in this package, some thought on chassis layout will be well worth while. The pulses have rise times of the order of a few tenths of a microsecond, so will radiate strong harmonics. I suggest that the layout shown in Fig. 4 could be used as a guide. The whole unit can then be housed in a metal case 18" x 14" x 7", with the chassis mounted vertically in the case, tubes and controls on one side, wiring the

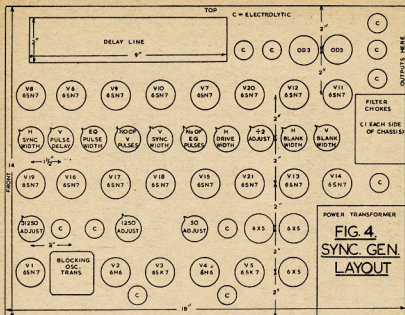


FIG. 4.
SYNC. GEN.
LAYOUT

other. Removable doors will enable easy access and alignment.

Adjustment

This really needs a good c.r.o., preferably with triggered sweep, but an orthodox unit can be used, with some limitations. First, set the master oscillator to 31,250 pps., by comparison with some known frequency standard. Always take test output from the buffer (1) so as not to disturb the frequency with your test prods. A wavemeter will make an excellent frequency standard—remember the output is rich in harmonics. Or you can use a c.r.o. comparison with an accurate audio oscillator.

To adjust the first phantastron divider, take output from the screen of V3 (2), via a 10,000 ohm resistor, hold this in sync. on the c.r.o., and spread it as wide as possible. Count the small downward pulses from leading edge to leading edge of the 1,250 pps. output pulses. Adjust the 2 meg. pot. in the grid circuit for a count of 25. If any kick back from V5, which is still unsynced upsets the display, open its plate supply till V3 counts correctly.

Now adjust V5 for a count of 25 also in a similar manner (3). Compare the output frequency with the 50 cycle mains. It should be very close, better than a quarter cycle. If not, check back again. Once adjusted, the phantastron is very stable, but the initial adjustment is tricky, although much easier with a triggered sweep c.r.o.

Next to be adjusted is V20, for division by 2, and pulse width. Connect c.r.o. to plate of V20A, via a 10,000 ohm resistor, and adjust for division. Remove 10K resistor, connect to cathode, display two pulses (15), and measure distance from leading edge to leading edge. This is 64 usec. By proportion adjust the pulse width to about 5 usec. Now comes the H. sync. MV (V8). Make sure it is being triggered at 15,625 pps., not 31,250, and

then adjust pulse width to 5 usec. Similarly with V12, the H. blanking MV, adjust to 11.6 usec. If triggering is occurring at 31,250, adjust the bias, about -9 volts, by the 1K, 25K voltage divider at the input of the delay line.

For the vertical sync. MV (V10), allow it to run continuously by removing V17 pro. tem., and adjust the slot width to 5 usec. Similarly with V9, the equalising MV, remove V17 and V15, and adjust pulse width to 2.5 usec.

For adjustment of the 50 cycle MV's a triggered sweep is a great help. Obtain your 50 pps. trigger or sync. pulse from the trigger line (5), plate of V11B. Display the vertical sync. area of the composite sync. (19), and adjust V16 to give 5 pre-equalising pulses, V17 to give 5 vertical sync. blocks, and last, V15 to give 5 post-equalising pulses. Using a standard c.r.o., difficulty may be experienced maintaining sync. with

the considerable sweep expansion needed to open up the V. sync. area enough for counting the pulses.

The vertical blanking MV is adjusted by superposing some 31,250 or 15,625 pulses from the master oscillator, or appropriate MV, and counting either 36 to 44 pulses for triggered or 50 cycle sweep, or 18 to 22 sync. pulses for 25 cycle sweep. This is because trigger or 50 cycle sweep displays both fields interlaced, and the sync. rate pulses are apparently at 32 usec. intervals.

Critical Components

Generally speaking 10% components will serve, with the following exceptions, which will need to be checked by experiment. The counter chain grid resistors. These will all be off, if substitute tubes are used, and the circuit values shown are right for my 6SK7s. The low value capacitors in the MV's have been selected, and the nearest standard value shown. The 0.25 μ F. capacitors are not critical. The resistors in the voltage divider chain in the delay line may have to be adjusted on test. Use linear potentiometers throughout, otherwise one end of logarithmic types will be cramped. The delay line capacitors must be matched as outlined earlier. The tubes shown have been used because I had them. Any pentode with suppressor not tied internally to cathode will do for the phantastrons. 12AU7s may be used in place of the 6SN7s without alteration. 12AX7s with some attention to the small capacitors in the MV's.

Power Supply

That shown is satisfactory. As the negative supply has to deliver about 250 mA. for the few microseconds that all output tubes are conducting, during the V. sync. period, although average output is only 60 mA., the large 200 μ F. output capacitor in the filter is essential. The glow tube on the 150 volt negative bus is to make sure that no variations find their way into the bias circuits. Glow tube regulation of plus 150v. is quite satisfactory, as the current drain is constant at about 120 mA.

In this Part, I have described the most important unit, and the most difficult. In Part Two I will describe the camera and viewfinder.

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Who's Afraid of a Receiver?

BY BYRON GOODMAN, WIDX

THE sad ungrammatical answer to the above question is "Too many."

Ask the Hams of any representative group how many of them ever dig into their receivers for any reason whatsoever, and you're likely to find that most of them are literally scared to death of the mere thought of action. This isn't just an idea we're pulling out of the air; be perfectly honest about it and you will admit we're describing the situation as it is.

Perhaps you're beginning to wonder why anyone should want to touch a receiver. After all, a good receiver should be in top working condition all the time, shouldn't it? Phooey! Why should it? Even the best receivers can stand touching up from time to time. Years ago the author was visiting a W2 friend of his who claimed he had a good location for 7 Mc. DX but it was no good for 14 Mc. and he had the cards to prove it. So we had to see, because it just didn't make sense. Listening around on the two bands did indeed show a marked difference in the way the bands sounded; 40 was "hot" and 20 was dead. The W2 was a sharp one, and even had a small antenna coupler between antenna and receiver.

When asked if he had checked the front-end alignment on 20, our friend replied that the receiver trimmers were sealed and the guarantee would be void if he broke the seal. (You old timers will recognise the receiver.) As we took leave of our friend we went out on a limb and said, "Break the seals, align the front end, and watch 20 come alive." A few days later we got a card from him, admitting he had screwed up his courage, broken the seals and aligned the front end on 20. Our pal concluded by enumerating the several new countries he had worked on 20 (including a couple we could have used nicely!)

One more fr'instance. Less than a year ago a friend built a new preselector which he connected ahead of a current model of a good receiver. Our friend was lavish in his praise of the preselector's performance, claiming that 10 and 15 metre signals practically inaudible on the straight receiver were loud and clear when the preselector was hooked in. We couldn't believe the receiver was that bad, so we asked him to check the front-end alignment on 10 and 15. The subsequent red-faced report was that the preselector didn't do as much good as he thought; the receiver front end had been out of adjustment.

But if you had wanted the story of somebody's life you would have bought a copy of "True Confessions." I want to know about receiver-phobia. We just threw in the examples to show how two Hams, who weren't afraid to tackle their receivers, avoided holding to erroneous conclusions about frequency-sensitive locations and superlative preselectors.

● There is a growing tendency these days to accept a communications receiver as a strange piece of complicated gear with "innards" no one but a man from Mars should touch. WIDX diagnoses this condition as "receiver-phobia" and tells why and how to avoid catching it.

Let's examine the possible causes of receiver-phobia and then talk about cures and the benefits of shaking off the affliction. What's so sacred about a receiver? Why shouldn't any Ham worthy of the name tackle a receiver as readily as he will a transmitter? For one thing, many operators are afraid to touch a receiver because they're afraid they'll spoil the dial calibration. (This is the same dial calibration they grouse about because it isn't accurate to 100 cycles!) Then there is the fear that the receiver will be thrown so far out of alignment that no one would ever be able to put it back. And, last but not least, there is the Ham who throws up his hands on the basis that "the thing is just too darned complicated." We're not talking about making any extensive receiver modifications, so the old it-will-lose-its-resale-value argument doesn't apply.

Let's examine these "reasons" for not touching a receiver. Do you think some high-powered engineer lines up every receiver at the factory? Of course not. It's someone who was taught the job, and chances are he or she knows very little about receiver theory and design. He or she merely follows a set routine, not at all unlike the alignment procedure outlined in most instruction books. Throw the receiver too far out of alignment? You could only do that by changing something very drastically not by twisting a few trimmers. After all, most receivers coming off an assembly line are not close to alignment, except through chance or a complicated system of subassembly testing. Production receivers have to be brought into line by the hired hands mentioned above.

As for the last argument, "complicated" is a relative term. A hand-cranked phonograph is sheer magic to a native of OQs, but it is only a curiosity to any high-school student who has his room cluttered up with hi-fi gear. Sure, a modern receiver looks complicated to someone with no electronic background, but it uses tubes and components quite similar, except in size and shape, to those used in a transmitter. The wiring diagram is really no more complicated than that of a modern band-switching transmitter; the sad truth is simply that most of these schematics are laid out so poorly that they look ten times more involved than they really are. We don't suggest that the manufacturer does this deliberately to justify some of the current

prices; we suspect that worrying about clarifying the schematic in the instruction book is merely considered an unimportant waste of time. If so, it's too bad, because we might have a more technical breed of Ham if things were made a little easier for him at the start. If the schematics were laid out with fewer long leads running all around the drawing, and each stage were set off just slightly from the others, a tyro would have considerably less trouble following the signal through from antenna to output. And surely some of the switched circuits could be less complicated looking! Granted it takes some planning to organise a schematic so that it is relatively easy to follow, but it would be a big help to newcomer and old timer alike.

THE SOLUTION

There are two ways you can go about ridding yourself of receiver-phobia. The long, but more satisfying, way is to learn what makes receivers tick. Find out from various texts just what superheterodynes are, the principles behind them, and some of the variations (single and multiple conversion, various detectors). Learn to visualise what is happening in your receiver! as you tune across a signal; pay no attention to what the signal is saying, at least while you're analysing receiver operation. Visualise the actions of the controls as you observe the effects, and if you don't know the answers, go back to the texts.

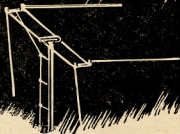
But maybe you have only 60 or 70 more years to live, and you would like a short cut to curing your receiver-phobia. OK, take the plunge. Lift the lid! Don't touch anything yet; just dig into the instruction book and find the section where it talks about alignment. From the diagrams in the book and the lid-up receiver, locate a trimmer adjustment on an i.f. transformer. Check to make sure you have an alignment tool (insulated screwdriver or wrench). If you haven't, go out to a radio store and get one. Turn on the receiver and tune in a signal. Check the location of that i.f. trimmer adjustment against the book just once more, grit your teeth, and turn the adjustment a little! Nothing real serious will happen, except that the signal you had tuned in may get a little weaker (or stronger). You will find that you can peak a signal or drop it down by your adjustment of the i.f. trimmer. This is the same sort of operation you perform when you peak the drive in your transmitter, but this is a receiver and you've taken the big step. (Don't fool with crystal filters unless you know your stuff; they can be tricky.) And don't be like one fellow we heard of whose receiver wasn't working too well so he tightened all of the loose screws, most of which were trimmers!

Again referring to the instruction book, read about front-end alignment

* Reprinted from "QST", May, 1957.

1 As described in McCoy's "Let's Listen", "QST", March, 1953.

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and repeat the experiment. You will find that trimmers on the r.f. and mixer circuits change the signal strength, while oscillator trimmers change the tuning and, consequently, the dial setting for a given frequency.

CHECKING PERFORMANCE

One point that bothers many Amateurs, and rightly so, is how to determine when their receivers have deteriorated in performance. To some extent the ability to spot such things depends upon how much you want to learn about receivers and what happens inside them, but we can pass along a few simple checks and you can be your own judge as to whether or not you want to do something about them.

Take the matter of hearing the weak ones. This is described by Ham as "sensitivity," "signal-to-noise ratio," but it means "hearing the weak ones." If your receiver has an antenna trimmer, as most of the current models do, the increase in noise you hear as you swing the trimmer through resonance (with the antenna connected) is a pretty fair measure of how good the front end of the receiver is. If you're in a noisy (electrically) location, the front end doesn't have to be as good as it does in a quiet location, because the local electrical noise is the limiting factor. Suspect the front-end alignment of your receiver if the noise does not peak up with the antenna trimmer the way it did when the receiver was new.

Many owners of two-dial complete-coverage receivers align the front ends of their receivers in the Ham bands as soon as they get their receivers, to insure that the best performance is available where it will do the most good. In most cases this Ham-band alignment will not be the same as that described in the instruction book, but all it involves is touching up the trimmers on the r.f. and mixer coils when the receiver is tuned to the centre of the Ham band for which the band switch is set, with the antenna connected. Refer to the instruction book for the trimmer locations; don't touch the oscillator trimmer unless trimming the mixer pulls the receiver badly off calibration.

If the Ham band falls at the high capacity end of the band-set capacitor, as is true of the 20 metre band on a number of receivers, the trimmer capacitor should be touched. Instead, pull the r.f. and mixer coils into line by adjustment of the tuning slugs, if there are any. If there aren't any, you will need a "tuning wand" to check alignment at the low frequency end of a range. This is an insulated rod with a brass sleeve at one end and a powdered iron slug at the other. Pushing the brass end in or alongside the coil lowers the inductance, and bringing the iron end near raises the inductance. If bringing either end of the wand near the end of the active r.f. or mixer coil increases the strength of an incoming signal, it indicates that the circuit is not peaked for that frequency. In this case you can change the inductance of the coil by cementing a closed copper loop or a bit of powdered iron slug at an appropriate distance from the coil. Obviously, you don't have to modify

the inductance of the r.f. coil if it has an antenna trimmer across it, and probably the best addition to a receiver without an antenna trimmer would be such a trimmer. And, of course, trimming the inductance at the low frequency end will require resetting the trimmer at the high frequency end.

Checking frequency calibration is something every Ham should know, and it shouldn't be necessary to point out that a 100 Kc. crystal oscillator is a Ham's best friend for this little task. You can bring a receiver into fair calibration on one of its ranges by bending plates on the oscillator tuning capacitor, but it's a job only for a guy with patience and confidence.

We've already mentioned i.f. alignment; you just peak the trimmers of the i.f. transformers for maximum signal. If the receiver has a crystal filter and you use the filter, be sure that your test signal has been properly centered in the crystal filter before you touch up the i.f. trimmers. Do this by switching the filter in, the a.v.c. on and the b.f.o. off, and tuning slowly across a steady signal (a harmonic from your 100 Kc. calibrator makes a good one) for maximum S meter reading. If the receiver drifts or if the crystal filter is very sharp, it pays to "rock" the tuning a little while you touch up an i.f. trimmer. This merely means tuning back and forth through the peak to be sure that you are not slowly drifting off the peak.

If your receiver has no S meter, and you don't have a voltmeter that can be swung across the a.v.c. line temporarily to act as one, your only recourse is to turn on the b.f.o. and peak the i.f. trimmers by ear. Here again the "rocking" technique is suggested, to eliminate minor drifts of the oscillators.

RECEIVER FAULTS

We won't attempt to kid you into believing that brand new receivers do not have shortcomings, because some of them do. One has no right to expect an inexpensive receiver to do everything the expensive ones will. The inexpensive receivers have corners cut right and left, in an effort to bring the price down, but some of these omissions can be corrected by the owners. One fault you will sometimes find in the low-priced receivers is a change in frequency with a change in gain-control setting. This doesn't (or shouldn't) happen in a good receiver. Usually all it takes to correct it is to regulate the anode voltage on the high frequency oscillator and the screen voltage of the mixer (they're usually the same tube element unless a separate oscillator tube is used). On occasions, the b.f.o. may also require voltage stabilisation. If you have a receiver that has this characteristic of frequency change with change in gain, all it may need is the addition of a VR tube and dropping resistor of the right values. Check the receiver voltage chart for the proper value. If, for example, the required voltage is 85, you can get it from a

VR105 and a suitable dropping resistor. If the receiver already has a VR tube and still exhibits the trouble, make sure that (1) the VR tube is lit, and (2) the mixer screen voltage is regulated. (It isn't in all receivers.)

If the receiver seems to drift too much, you can try the dodge of propping up the lid, as pointed out in an earlier article.² Don't get any big ideas about putting in a compensating capacitor across the high frequency oscillator, unless you want to run a long series of tests. The trouble with temperature compensation is that you have to find a spot in the set where the temperature varies in the same way that the frequency does. Since the temperature drift may be caused by thermal changes in several components, you can see how tough your chances are of finding the magic spot. Shoot for reducing the temperature rise; your hair will stay dark longer.

HMMM—HUM

Some of the inexpensive receivers have a little too much hum in the audio. This might be lack of filter in the power supply, so the first and most logical thing to try is another 20 μ F across the power supply. However, usually life isn't that simple, and the next thing to try is to find out if the hum comes from ahead of the audio volume control. If the hum increases with the setting of this control, the hum is coming from somewhere ahead of the control, and this can mean that either the lead from the detector or the detector itself is the culprit. Shielded leads and a better volume control may be the answer to the problem; at least they're worth a try. If the hum comes in from beyond the volume control, as indicated by no change in hum level with the volume setting, using smaller coupling capacitors between stages will reduce the low frequency response and, consequently, the hum level.

If you're a c.w. man and find that you hear no T9 signals on 21 and 28 Mc., but you do on the lower bands, you have frequency modulation of the high frequency oscillator. This is tough to cure sometimes, but just changing the oscillator tube may help. If the oscillator circuit is one with the cathode tapped "up" on a coil, adding a small low resistance r.f. choke to the ungrounded heater lead may reduce the hum. Don't overlook the possibility of the rough note coming from a humming transformer that vibrates the chassis and modulates the oscillator frequency; the cure here is to tighten the screws that hold the transformer together.

CONCLUSION

A dozen articles might not cover all of the facets of receiver design, test and maintenance, and we claim nothing more than a start for this one. But it will have served its purpose well if a few sufferers of receiverphobia have been started on the road to recovery through the assurance that they have nothing to fear from the receiver itself; the only enemy is one's own ignorance and languor.

² Goodman, "Getting the Most Out of Your Receiver," "QST", January, 1954, and reprinted in "A.R." June, 1954.

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

DX COUNTRIES' LIST

Editor "A.R." Dear Sir,

The more I think about this "country" business, the sillier it seems. Of course Hams are recognised as being a little that way to start with, but these different lists of countries for DXCC purposes make things more difficult.

The W.I.A. has its own DXCC but, as far as can be seen, this follows no apparent pattern. One would think that Australia, being a member of the British Commonwealth, would naturally follow the R.S.G.B., but no—the R.S.G.B. countries' list is not a post-war affair. If you worked a fellow back in 1921 you can still get credit for him in the R.S.G.B., but not in the W.I.A.

Seeing then that it is a strictly post-war affair you might think that it would follow the A.R.R.L.—you're wrong again brother. It does not do that either—for instance the A.R.R.L. counts the British Phoenix Islands and Canton Island as two separate countries, the W.I.A. says they are not. The A.R.R.L. recognises Aland Islands as a separate country and so does "CQ", but the W.I.A. will not recognise this one, and so on.

The position is further complicated by "CQ" magazine having its own list and discrepancies creep in there also. As A.R.R.L. and "CQ" are both in U.S.A. you would think that perhaps they could achieve uniformity, but again No.

For instance "CQ" recognises the British Virgin Islands as a separate country, but the A.R.R.L. says that this is part of the Leeward Islands, and there are other similar instances.

Why can't we get some uniformity, and if we can't get that, why can't the W.I.A. announce a policy of its own and stick to it—saying that the W.I.A. will compile its own list of countries, then maybe the others would follow and we would get a uniform list.

Let's have a look at the various lists and see how silly it all is.

I can think of nothing sillier than the position in Great Britain where you can get credit for G, GM, GW, GI, GD and G, all in the one island group, under the one Government and using the same series of postage stamps. Here is credit for six different countries. Yet you take the position of Belgian Congo (OQ5), and Ruanda Urundi (OQ0)—separate stamp issuing countries. The A.R.R.L. and the W.I.A. say they are the same place. "CQ" recognises them as different. You will find them as separate in the Atlas.

If Great Britain is to be divided up into six, why can't we divide Italy into three? We already have Italy and Sardinia (I and IS), but although "CQ" recognises Sicily (IT) as separate for country purposes, the A.R.R.L. and the W.I.A. do not. To my mind it is just the same as Great Britain.

There is a dependency of Mauritius called Rodrigues Is. which is a tiny spot some miles away from Mauritius. It has now received country status from the A.R.R.L.—yet Fanning Island and

Christmas Island (VR3), which are just as far apart, are held together as one country. If they split the Caroline Islands into Western and Eastern Carolines, why not this? The same applies to Madagascar and some of the French islands separated from the main island by only a few hundred miles. Because an active Ham is there, it's called a separate country.

No doubt you have heard of Finland and Finnish Karelia (OH and UN). Karelia was the slice of Finland which Russia took. It is now recognised by all as a separate country. Let's have a look at post-war Germany—is not Western Germany and East Germany in the same position? The Russians took East Germany. It has a separate Government, issues its own stamps and is cut off from Western Germany by the so called "Iron Curtain". I therefore suggest that DL and DM should be recognised as separate countries.

There is also the question of the Falkland Islands Dependencies and the operation therein of Argentine and Chilean Hams. A.R.R.L. and "CQ" recognise a contact with one of these stations as credit for that particular country. The W.I.A. will not, taking the attitude that these stations are improperly operating on British territory and are not therefore properly licensed inasmuch as they were not licensed by the Falklands authorities.

However, I understand that in the International Geophysical Year, foreign countries have permission to operate observation stations in the territories of other powers. Can it be that contacts with "LU" and "CE" stations operating in the Falkland Islands Dependencies during the I.G.Y. will therefore be recognised???

If Arabia is divided up into Aden proper, the Sultanate, Quatar, and Trucial Oman, and Great Britain is divided into its six separate countries, then what a crack at the assorted States which make up the Federation of Malaya. Each has its own Sultan and each issues its own postage stamps. Their claims to be considered separate countries are stronger than Scotland and Wales.

Then there is East and West Pakistan—separated by India—surely this is analogous to the Eastern and Western Carolines.

What about New Guinea and New Britain being separated—they are just as much separate countries as England and Wales are—perhaps more so.

If the islands around Madagascar can achieve country status, why can't the islands around Papua New Guinea receive the same treatment?

Perhaps the Americans might grumble if we counted the Aleutian Islands as separate from Alaska—but look at them on the map—they run right up to the Asian mainland—yet the one next to Asia counts as Alaska and North America.

Antarctica is another continent which merits some division—many countries claim portion of it as their own territory. Why can't credit be given for contact with stations which operate in that particular territory? The claims of those countries to the territory they say is theirs, seem to have been recognised internationally so why can't the countries list people bring themselves up to date?

I know that the present Manager of the DXCC, and his predecessor, are both well known DX operators, but apparently the compilation of the list is not left in the hands of one man only.

Can readers please be informed just who does run the W.I.A. DXCC Countries List and what experience (if any) have the people concerned in such matters as Geography, World Affairs, and DX operating???

There are so many other examples that if I were to quote them all I'd never get this published. However, can something be done about it please?

—Alan G. Brown, VK3CX.

[Federal Executive of the W.I.A. were asked to comment on the above letter. Herewith is their reply.—Ed.]

FEDERAL EXECUTIVE'S COMMENTS

Federal Executive has long been aware of the inconsistencies mentioned in this letter. As a result, late last year, the following motion was submitted for consideration by members of the International Amateur Radio Union.

The motion moved by the Wireless Institute of Australia is:—

"That an official I.A.R.U. DX Countries' List be prepared by a committee consisting of a representative from Region 1 (American Radio Relay League), Region 2 (Radio Society of Great Britain) and Region 3 (Wireless Institute of Australia), and all additions and deletions be made only by a unanimous decision of the three region representatives."

Results of the voting on this motion will appear later this year.

—Federal Executive.

OBLIQUE STROKE F.O.C.

Editor "A.R." Dear Sir,

Reference to Oblique Stroke F.O.C. in Feb. issue "A.R." On reading this conglomeration of garbage, my first reaction was to ignore it and treat it with the contempt it deserves, but for the benefit of all concerned I shall endeavour to enlighten readers as to why the "F.O.C." functions.

F.O.C. stands for "First Class Operators' Club." Some of the rules are as follows: "Its aim will be to foster and encourage a high standard of operating ability and behaviour on all Amateur Bands. Membership be limited to those who can send and receive morse at not less than 18 w.p.m. Can QSY if necessary, break-in single channel working with v.f.o. is desired but not obligatory. Members prepared over the air to assist and advise newcomers to Amateur Radio. Operators will be elected to membership on recommendation of at least five sponsors who they themselves already are F.O.C. members. These sponsors must have been in contact with the operators concerned over the air and be satisfied that he or she can fulfill the foregoing conditions. Members should sign F.O.C. after their call sign. Members of club will adhere strictly to band planning and also members are reminded that good manners over the air are part of first class operating."

What is "snob value, discredit to the true democratic spirit, un-Australian,

un-democratic, time wasting," etc., about the above standards, Roth Jones. There are approx. 181 members in Great Britain and approx. 145 members overseas. On looking very carefully through the P.M.G. Handbook of rules for Amateur Operators, I can see nothing that the signing of F.O.C. after one's call sign commits any breach of the regulations, so I am at a loss to know why Roth Jones thinks it quite illegal.

Soliciting for sponsorship to club is definitely barred and anyone indulging in such practices would have little or no chance of ever becoming a member.

Could anyone listen to the excellent operating ability and highly skilful technique employed in transmissions from VK3's FH, RJ, CX, VK4YP, VK-5BY and other members who have been appointed without solicitation and it may be significant that Roth Jones VK3BG has not been invited.

First thoughts, his expressions may be "sour grapes", but perhaps it may well be that he does not measure up to required standards.

Now, concerning the use of CQ/F.O.C. certainly this is used during the Annual Contest between members, how else would they be identified in their own contest?

There is no suggestion of "snob value" in the signing of F.O.C. but rather it should inspire other aspirants to improve their operating ability with a view of future membership. Readers will therefore agree that it is not "un-Australian, un-democratic, time wasting" as stated by Roth Jones, but rather it is an honour to belong to such an International Body of Gentlemen Operators.

Roth Jones' statement re lowering of one's self to be a member of such a clique, is rather in reverse, as no doubt, old timers such as VK3RJ, VK4YP and I include myself will agree that the invitation to join F.O.C. and the day we were fully appointed members was the culmination of more than 20 years of hamming.

Roth Jones' reference to "scab labour" and the "plague" brings discredit to no one but himself, as the prestige of membership of F.O.C. remains untainted and unscathed.

You should know better Roth Jones. —Roy Baxter, VK4FJ.

[Letters along similar lines have been received from Messrs. E. J. R. Cowles VK6EJ, R. E. Jones VK3RJ, A. L. Kissick VK3KB, and A. Brown VK-3CX, but space does not permit publication.—Ed.]

TECHNICAL CORRESPONDENCE

Editor "A.R.", Dear Sir,

Once again another is trying to convince himself and others that the trend towards s.s.b. is not all as is claimed by its users. Article by VK3ACA, February, 1958.

I would like to point out that the British Post Office has spent several thousand pounds on s.s.b. radio telephone installations, and whether he likes it or not, as a taxpayer he has contributed to several Government installations in this country, that I am aware of.

When I first took up this mode of operation, I was told by another Amateur that s.s.b. was a passing fancy, and would not last. I note he has purchased and is now operating a complete s.s.b. station.

It is not difficult to make s.s.b. sound like an a.m. signal, and the quality can be designed to be better than the average country b.c. station is able to provide to the public. It is also possible to receive s.s.b. with little strain on a regenerative detector as many s.w.'s. are doing. It has been proved consistently that s.s.b. provides a more stable signal, which under given conditions is easier to follow than a.m. signals. The outright statement that c.w. still has the edge on all these systems is open to debate. I have operated c.w. both commercially and for some time on the Ham bands, and was of the same opinion. However, after changing to s.s.b. Nov. '56, I have conducted tests and each time received better "S" reports for s.s.b. I attribute this to the frequency diversity effect of s.s.b., which has the "edge" on c.w. as far as selective fading is concerned. With s.s.b., the user is concerned with translating the audio spectrum to be used directly to a radio frequency to enable propagation; and the reverse frequency conversion from r.f. to a.f. should take place at the receiver. The use of a product detector or converter does help with the noise problem, because, operating correctly, it is insensitive to amplitude disturbances.

I would like to include the following table for consideration for pure tone signal modulating a.m.—

Mod.	% Total Power in Carrier	% Total Power in Sidebands
25	100	0
50	89	11
75	78	22
100	66.6	33.3

i.e. one sideband, which is all that is useful with a.m., has only 16.65%

With s.s.b., no modulation, no power; 100% modulation is 100% useful signal on the air (like c.w.).

I would recommend that VK3ACA take a trip to some of the s.s.b. gang in Melbourne and see the system in use.

—V. J. Kitney, VK6VK, s.s.b.

PEAK POWER FOR S.S.B.

Editor "A.R.", Dear Sir,

I am afraid John Adcock, VK3ACA, in his article in "A.R." for February has made a major error.

In his summing up, para. 7, he says we should have a peak power of 100 watts. As an a.m. 100 watt transmitter 100% modulated by a sine wave runs 400 watts peak power, it is only fair to allow this same peak power for the s.s.b. transmitter.

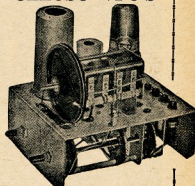
An a.m. transmitter of 100 watts peak power would have a carrier power of 25 watts and a carrier power of 25 watts is certainly not our power limit.

The comparison of a s.s.b. transmitter of 100 watts peak power against an a.m. transmitter of 400 watts peak power by VK3ACA certainly illustrates the effectiveness of s.s.b.

Anyway, the proof of the pudding is in the eating thereof.

—Barry White, VK2AAB.

AVAILABLE FROM STOCK GELOSO VFO'S



Model 4/101 and Model 4/102 with calibrated dial and hand—some perspex escutcheon—

£10/4/9

TRANSMITTER CASE with chassis and panel to suit Geloso £6/0/0

★ GELOSO PI-COUPERS

As a companion to the Geloso VFO unit the same manufacturer offers a band-switched Pi-Coupler with a tuning range of 3.5 Mc. to 28 Mc. of small dimensions and having the capacity of 807 or 6146 output into a load of 40 to 1,000 ohms. Wound on high quality ceramic former—

PRICE 31/6

★ "WODEN" MODULATION TRANSFORMERS

UM1 30 watts Audio, 120 Ma. max. current ... £7/9/9
UM2 60 watts Audio, 200 Ma. max. current ... £10/13/3
UM3 120 watts Audio, 250 Ma. max. current ... £12/2/6

Woden Modulation Transformers will match any set of impedance conditions. Also suitable as output transformers for high quality public address equipment.

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Chassis Female Connector ... 3/6
Cable Male Connector ... 3/6
Cable Coupling for Joining two Female Connectors ... 3/6

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Please include Freight and Exchange with Orders.

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**WILLIAM WILLIS
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10,000 TIMES FASTER THAN A SATELLITE

Sydney to Melbourne in two minutes: this example of the speed of the earth satellite probably means more to us than stating the velocity as 18,000 miles per hour.

Sydney to Melbourne in one seventy-fifth of a second: this is the speed (ten thousand times greater than that of an earth satellite) at which electrons from the Radiotron picture tube gun strike the phosphor coating on the face of the tube.

As each electron strikes the screen at this terrific speed, a flash of light is produced. By controlling the distribution and intensity of these flashes the electron gun creates your television images.

The electron gun is one of the many units that go to make up the Radiotron picture tube. Amalgamated Wireless Valve Company introduced and was the first to manufacture in Australia the electrostatic-focus electron gun illustrated below.

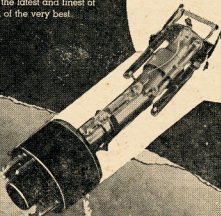
The electrostatic-focus gun is acknowledged to give clearer, sharper pictures than earlier types and to stay in focus under all conditions of transportation, installation and operation.

It is this policy of using the latest and finest of techniques that ensures you of the very best when you buy Radiotron.



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AMALGAMATED WIRELESS VALVE COMPANY PTY. LTD. 47 YORK STREET SYDNEY

QSL CARDS

BY E. W. TREBILCOCK,* BERS195

During my 30 odd years' association with Amateur Radio, the humble QSL card has always fascinated me, for reasons more than one. The most important of which is the fact that it is a confirmation in writing of a contact made or a report received. (I am a firm believer in the long established line of thought and action, by a majority, that all initial contacts on a particular band, using a particular mode of emission, are worthy of a QSL card.)

To me a QSL card is more than a mere piece of "wallpaper". (I don't think the term "wallpaper" does justice to a QSL card, anyway.) A QSL card is a picture, portraying the thoughts of man and woman in layout, wording and color schemes. It is an aid to acquiring of world-wide geography knowledge and its passage from point to point provides many a philatelist, such as my son and myself, with an assortment of postage stamps, many of which would be hard to obtain locally. Above all things, a QSL card helps to set the seal of friendship established between peoples of various races, colors, and creeds in some 260 odd countries of the world.

As an added interest, I recently made a careful analysis of just how well (or otherwise) a QSL card is "filled in" with detail by the station operator concerned. I used my inward stockpile for June (90 QSL cards) plus the first 10 QSL cards received for July of 1957, and from the data available I obtained the following interesting results:—

- 95 of the QSL cards bore my call sign.
- 78 were dated.
- 74 mentioned the input power used.
- 73 gave the type of aerial.
- 72 listed the type of receiver.
- 71 mentioned the frequency band.
- 60 quoted the time of the logging.
- 54 indicated the mode of emission (c.w. or phone).

Looking at the results obtained, it is obvious to me that far too many operators spoil their good intentions when QSL-ing, by omitting to include some (or all) of the eight details listed in the previous paragraph. Three facts amazed me, viz:—

- 5 of the QSLs did not include my call sign.
- 2 of the QSLs omitted 7 of the 8 details listed above.
- 46 of the QSLs did not contain an indication whether the QSL was for a c.w. or phone report.

It is my considered opinion that five of the details listed above are a "must" insofar as filling out the QSL card is concerned. The five in question are as follows: Call sign, date, time, frequency and mode. I venture to suggest that any QSL card which lacks any one, or more, of the five "musts" is not a QSL card at all, and is therefore worthless to the recipient. The cards are especially worthless from the point of view of those who claim the many and var-

CONVENTION AT URUNGA

The VK2 North Coast and Tablelands Zone will be holding its Ninth Annual Convention at Urunga during the coming Easter week-end and all Amateurs, associates, XYLs, friends, etc., are cordially invited to join us for a very pleasant week-end. To defray expenses a registration fee of 15/- for gents, and 2/6 for ladies will be collected.

Accommodation is available upon direct application, or to Mr. Brian Clarke, VK2ZCQ, of P.O. Box 8, Bel-lingen, and I would advise you to book early to avoid disappointment. For the information of the "regulars" the Pilot Guest House has closed down. The available accommodation is as follows:

- (1) Ocean View Hotel, Urunga, approx. 37/6 per day or £11/11/- p.w.
- (2) Guest House, Mrs. Lee, Bonville St. 30/- day or £8/8/- p.w.
- (3) Flats from £8/8/- to £16/16/-, depending on size.

A deposit of £1 per person is required for the Hotel and Guest House, but it is variable for the flats.

The tentative programme is as follows:

Friday, April 4—

- 8 p.m.—General get-together to discuss W.I.A. affairs or similar topics.

Saturday, April 5—

- 10 a.m.—Registration and ragchew.
- 3-5 p.m.—Gerry Challenger Remembrance Contest on 7 Mc. for portable or mobile equipment—non-mains powered.
- 3-5 p.m.—Heats 144 Mc. Blindfold Tx Hunt.
- 7.15 p.m.—144 Mc. Fox Hunt.
- 8 p.m.—Social evening. 18 watter and perhaps an outline of W.I.C.-E.N. activities, films.

Sunday, April 6—

- 10 a.m.—144 Mc. Transmitter Hunt.
- 11.0 a.m.—VK2WI broadcast.
- 11.30 a.m.—144 Mc. Tx Hunt.
- 3-4 p.m.—All-band Scramble.
- 3-6 p.m.—Heats and finals 144 Mc. Blindfold Hunt.
- 8.0 p.m.—Prize-Giving Concert and films.
- 10.30 p.m.—Disposals Auction, supper and ragchew.

Transport to Urunga is by road or rail, and by air, via Coffs Harbour.

ied world-wide certificates of merit now available to tx men and s.w.l.s. alike.

I suggest that all who read this article, and who have time on their hands, select 100 of their most recent inward QSL cards, analyse same along the same lines as I have done, and see how your results compare with mine.

When filling in your own QSL cards for dispatch to the other fellow, give positive thought to completing those eight details (especially the five "musts") I have so often mentioned in this article, and so make your QSL card one worthy of all it represents and a credit to the man (or woman) concerned.

The road to Urunga from Sydney is now sealed except for a maximum of 16 miles which can be completed by Easter. If you desire to come by plane, please advise the writer in ample time to arrange transport between Coffs and Urunga.

I look forward to seeing a bumper crowd.

—N. A. Hanson, VK2AHH, West Kempsey.

W.I.C.E.N. NOTES

Arrangements are now well in hand for printing Authorisation Cards. Cards will be issued by Federal Executive through the agency of your Divisional W.I.C.E.N. Co-ordinator. Hence if you wish to be in the first distribution now is the time to register.

Obtain full details from your Divisional Co-ordinator and make sure you fully appreciate the obligations imposed by membership of W.I.C.E.N.

Reports being received from all Divisions indicate a very gratifying interest in W.I.C.E.N. and implies should increase as I.G.Y. activities expand.

During the year interesting and meaningful tests will be arranged for W.I.C.E.N. networks. Readers interested in W.I.C.E.N. activities are advised to index these notes for ready reference. Apart from continuing publication of our own rules, data regarding overseas activities bearing on subjects of interest to us will be included.

Operating Procedure continues:—

- 2.11 When a station is called, but is uncertain of the identification of the calling station, it shall reply immediately by transmitting: "This is . . ." (giving its own call sign). Say again your call sign.
- 2.12 The responsibility of establishing communication shall normally rest with the radio station having the right to transmit.
- 2.13 Stations should make use of relay by another station, if unable to contact control direct. Stations should at all times be ready to act as a relay centre.
- 2.14 When a control station is called simultaneously by several stations, the control station shall decide the order in which such stations shall communicate.
- 2.15 Should it become necessary to suspend work because of e.g., breakdown or adjustment of apparatus, a station shall, if possible, inform the control station beforehand, followed by the time at which it is expected that communication will be resumed.
- 2.16 When transmission is again possible the station shall so inform the control station.
- 2.17 When a station is unable to establish communication due to receiver failure, it shall transmit its traffic preceded by the phrase "I am transmitting blind."
- 2.18 Messages should be transmitted at dictation speed. As a guide, the operator may write the message as he transmits it.
- 2.19 Each station shall listen to all communications on its network and be responsible for rendering communications assistance to other stations as required, permission being first obtained from the control station.
- 2.20 Each written message shall be read prior to commencement of transmission in order to eliminate unnecessary delays in communications.
- 2.21 Transmissions shall be conducted concisely in a normal conversational tone; full use shall be made of standard phraseologies as prescribed.
- 2.22 The Phonetic Alphabet shall be that recommended by N.A.T.O.
- 2.23 The pronunciation of numerals shall be as follows: 1—ONE, 2—TWO, 3—THREE, 4—FOUR, 5—FIVE, 6—SIX, 7—SEVEN, 8—EIGHT, 9—NINE, 0—ZERO.

SILENT KEY

It is with deep regret that we record the passing of:—

Jack Groves, 20/12/57, Member Victorian Division.

* 340 Gilles St., Thornbury, N.17, Vic.

BOOK REVIEW

U.H.F. TUBES FOR COMMUNICATION & MEASURING EQUIPMENT

By Members of Philips Electron Tube Division

With use of the u.h.f. bands increasing every day, all Amateurs should be conversant with the latest technique in use on these frequencies.

This book covers a representative range of tubes, circuits and layouts to suit operation in the 300 to 10,000 megacycle spectrum. Both transmitting and receiving tubes are included, the latter receiving thorough attention with a discussion on grounded grid r.f. circuits and standard noise sources. Transmitting tube data covers discal triodes, reflex-klystrons and u.h.f. triodes of standard construction.

Definitely a book recommended to all Amateurs interested in 288 and above.

Our copy from Messrs. Philips Electrical Industries Pty. Ltd., Philips House, 69-73 Clarence Street, Sydney. Price in Australia, 13/-.

TUBES FOR COMPUTERS

By Members of Philips Electron Tube Division

The electronic tube, in its function of an inertialess switch, is one of the essential parts of an electronic computer. The tubes described in this book are specially designed for this use.

As well as comprehensive data on each of the tubes, many typical circuits are published. The data is divided into two sections, one for high speed computers up to the rate of one million units a second, and the other for lower speed computers. A chapter on constructional practice is included.

This book is recommended as a companion to "Analysis of Bistable Multivibrator Operation".

Our copy from Messrs. Philips Electrical Industries Pty. Ltd., Philips House, 69-73 Clarence Street, Sydney. Price in Australia, 13/-.

TUBE SELECTION GUIDE

Compiled by Th. J. Kroes

This handy book enables the user of electronic tubes to quickly determine preferred tube types.

A number of tables are included, grouping the tubes according to their most important electrical properties.

The book is most comprehensive in its coverage, and includes data on receiving, transmitting, microwave, industrial, and cathode ray tubes.

Our copy from Messrs. Philips Electrical Industries Pty. Ltd., Philips House, 69-73 Clarence Street, Sydney. Price in Australia, 13/-.

YL CORNER

ELECTRONIC FANTASY

Once upon a time there was a city slicker, the image of a pirate; a genuine parasitic element, a dud who had gone soft. He stole a frequency, he stole a call sign, and then he stole the band. He also tried to steal tower and antenna. He was a hope plate and crystal so he used lines of force to blow up the front end and break-in to kilocycle hobbyist. Kilowatt? Well to kill a radio ham whose junk box was full of such things. The ham became a resistor and strongly impeded the city slicker with a positive charge. Both became heated, the ham became a number of turns and coiled himself up to try to get out of the city slicker's range. The city slicker was a type-free from restrictions and left his mark 2 after using a high voltage probe, whereupon the resistor became a bleeder, but fortunately it was only skin effect.

It was then a case of up and atom and sparks flew in all directions. The ham slugged the city slicker with an iron core, deflecting him from his normal path. The city slicker tried to choke the resistor who then neutralised him with a by-pass from a bottle. He felt his pulse which was at zero beat, but he didn't have enough energy to discharge this dummy load as his useful power was now negligible. The city slicker, who was an all-round-looker, then revived and the ham had to stand up to another battery of charges.

The city slicker couldn't get a bearing so he jumped the air on a grounded grid and went for more grid drive, then cycled across the earth to a ground plane and with a call sign and a wave he took-off making a thermionic emission with a space charge.

The ham finished up with a sore tooth and in addition to losing a megacycle he also lost sink and lost the band.

VALVE DATA

6CB6

SHARP CUT-OFF PENTODE

The Radiotron 6CB6 is a sharp cut-off pentode of the miniature type designed for use as an intermediate frequency amplifier at frequencies up to about 45 Mc. and as an r.f. amplifier in the v.h.f. television tuners.

The valve features a very high transconductance (6,200 μ ms) combined with low interelectrode capacitance values, and is provided with separate base pins for grid No. 3 and cathode to permit the use of an unbypassed cathode resistor to minimise the effects of regeneration.

Base: 7-pin miniature.

Socket connections:

Pin 1—Grid No. 1.

Pin 2—Cathode.

Pin 3—Heater.

Pin 4—Heater.

Pin 5—Plate.

Pin 6—Grid No. 2.

Pin 7—Grid No. 3, Internal Shield.

Electrical Data

Heater Voltage 6.3 volts

Heater Current 0.3 amp.

CLASS A1 AMPLIFIER

Maximum Ratings:

Plate voltage 300 max. volts

Grid No. 2 (screen) 150 volts

Plate dissipation 2.0 max. watts

Grid No. 2 input: 0.5 max. watt

(for grid No. 2 voltages up to 150 volts)

Peak heater-cathode voltages:

Heater negative with respect to cathode 200 max. volts

Heater positive with respect to cathode 200*max. volts

*The d.c. component must not exceed 100 volts.

Typical Operation and Characteristics:

Plate voltage 200 volts

Grid No. 3 (suppressor) connected to cathode at socket.

Grid No. 2 voltage 150 volts

Cathode-bias resistor 180 ohms

Plate resistance (approx.) 0.6 megohm

Transconductance 6200 μ ms

Grid No. 1 bias (approx.) for plate current of 10 mA -8 volts

Plate current 9.5 Ma.

Grid No. 2 current 2.8 Ma.

AMATEUR RADIO SERVICE

A NEW SERVICE TO THE AMATEUR including—

- ★ Modifications to and the re-building of all types of Surplus Equipment to your own specifications.
- ★ Service to all types of receiving and transmitting equipment.
- ★ The construction of Amateur equipment to your own specifications, such equipment includes: Receivers and Transmitters both H.F. and V.H.F., All-Band Converters, V.H.F. Converters, Exciters, Receiver Front-ends (single channel or multi-band), Mobile Transmitters and Receivers or Converters, Modulators, Power Supplies, Frequency Meters, "Q" Multipliers, Pre-selectors, Aerial Couplers, etc. In fact anything you may require in the Amateur field can be made to order.
- ★ Should you have the materials for that certain project, but do not have the time or are so placed that you are unable to complete the job, drop us a line and we will be pleased to assist.

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For further details write to—

AMATEUR RADIO SERVICE

605 ABERCORN ST., ALBURY, N.S.W. Phone: Albury 1695

50 Mc. W.A.S.

Call	Cor. Add. No. Cntr.	Call	Cor. Add. No. Cntr.
VK2WJ	13 4	VK3AZZ	10 1
VK3PG	5 3	VK3XA	11 1
VK3VW	9 3	VK3GM	12 1
VK4Y	2	VK3ACL	14
VK4HR	4 2	VK3JZ	16 1
VK5LC	1 1	VK2HO	17 1
VK6W	3 1	VK2ABC	8
VK3IR	6 1	VK3WH	15
VK3HT	7 1		

DX

Frank T. Hine, VK3QL
30 Abbotsford Road,
Homebush, N.S.W.

Am now back again to all the "chores" after a delightful holiday in Adelaide, and strange as it may seem there was not much talk of DX with any of the VK3 boys I had the pleasure of visiting.

Some good DX has been on the bands if you were fortunate enough to be on at the time, but no two days were the same. Some very short skip has been evident at night in Eastern Australia and the DX stations have been complaining of the short skip in their areas. Many strong W signals have been heard on the long path in the mornings.

Entertained WTKVU for a few hours whilst he was in Sydney and he was most interested to be on the air from "down under" and hear W signals. Some very interesting information came out of our talk, one of which is the way the leading DX boys in the States operate and have themselves organised. If one of them is on the band and hears something worthwhile in the line of DX, telephone calls start to get the others on the air. These are not local calls, as they can become coast to coast. WTKVU has made calls of over 1,200 and up to 1,500 miles himself and told of one instance when he rang a W0 asking him to zero beat a VQI he was working, receiving the reply I am zero beat so John did not hear that VQI. So now you know how the W stations appear in profusion when something worthwhile shows up. Most of them were probably asleep.

NEWS AND NOTES

The reference to ZLIABZ on last month's notes is to be corrected to ZLIABZ. If you need the Kermadec Is., and who doesn't, ZLZGX or VK5AD may be able to arrange something for you even cross band. Generally he listens for a.m. only, but can read slow c.w. Power is 100w, and gets out quite well.

Activity from FWRAA has temporarily ceased as he is in hospital at Noumea and will be in Noumea for some time (ZACK). ZLICI, the old 80 mx stalwart, has worked over 70 and heard 140 countries on 3.5 Mc. Although it is shown as acceptable to the A.R.L.I., the Aahlin Is. is not being allowed for Australian DXCC credit (3CX).

There is renewed possibility of activity from the Maldives as there is change of command taking place, and the new C.O. is an ex-Amateur.

ZAGH overheard an HR station telling a DX station that the HR Bureau was not functioning at present and that many cards had been "lost".

A range call appearing on the 14 Mc. band is FK0AD. Gave his QTH as Chesterfield Is. JT1AA is now active on 21 Mc. The first QSL from this station have arrived in Australia, but were only four in number.

The XYL of JT1AA is on 14 and 21 Mc. with the call of JY1YL.

HR0AT has been on from San Andrea Is. FYTCK/0 has been active on 14 Mc. phone, FYTCK often acting as the link.

UP6L is the call of the Russian station in the Amateur bands operating from the North Pole (ZEG).

VK0AB has now ceased operation from Moscow. Had 70 countries confirmed and had made W.A.S. (ZEG).

CSZO has now gone QRT and returned and is operating on QZ.

ZLIACV is operating from Antarctica as ZLIAC and plans operation on all bands. VK5AB has been having difficulty getting his cards. Sez there are hundreds somewhere for him. He asks that all his cards be routed through the VK3 Bureau and that a DX station sends his QTH, tell him it is Norfolk Island via Australia, as many cards are being returned to the DX station if Norfolk Island is not the address.

VXSA is W3A operating from Saigon. He expects to have 1kw. on a.s.b., a.m. and c.w., usual hours of operation being 0100Z-0130Z and 1000Z-1130Z.

SWRAA QSLs are reaching him OK via the OK Bureau. Have not heard Phan for some time.

* Call signs and prefixes worked.
- zero time - G.M.T.

VREN is the first station to appear from the new "invasion" of the Pacific Xmas Is.
CR0AG is active from Easter Is. on 14, 21 and 28 Mc. phone (ZJZ).

ACTIVITIES

3.5 Mc.—ZAGH: ZLIABZ*, ZQL: ZLIABZ*, 7 Mc.—ZAB: FAIRJ*, DJZHC: VBSAW*, JAIAEA*, ZAH: OKXDL*, ZAG: G. ZAH: 2AMB: KA2FP*, Ian Thomas: JAIAMZ*, B. Smyth: JAIJZ, BERSH9: DLXAT, DUTSV, GJZKZ, GJZU, GJEP, KJAN, HIEEC, 5R1H, OH7NF, QOSRU, SMSIFR, UAIBE, UA-1YH, UA4FE, UAOCN, UBSQF, UCKRAD, UF-6KAA, VSCIN, VSIFJ, VSDP, VQXDU
14 Mc.—C.W.—ZAB: URZAA*, LZ1WD*, UA-4KCE*, UP0L7*, SV8AB*, TI2VA*, FFAC*, CNBJX*, UA3KBA*, OKIKTI*, UPFKBA*, UNIAI*, UBAKVA*, UBAE*, ZL1WZ*, LA-2/E/P*, ZC3AC*, VQ8AS*, HASAM/ZA, HK-40L, HVICN*, ZAGH: SV0WR*, CR8AC*, EA-9EM*, FBXK*, FJCK*, UMIAN*, LZIKSZ*, IAD7D*, ZC3AC*, HSC*, ZEP, V88AJ*, UA-0KDD*, CN2BE*, OAPFA*, UB8KAA*, MP-4BLL*, UA4NB*, KM6BJ*, ITTATI*, IS1PIC*, LZ1D*, VRN, EABCE, FK0AD, EABAU, 2K-24, OY5ML, FLAC, FBICE, UCKZBR, UP-2AT, HL9KS, 3AIR: CT3AB, KP4AZ, JT-1A*, CRAC*, XE1RY*, XWAA*, HTIC*, VK0KT*, ZCR8*, ULTHB*, SVK8*, V8AJ*, FL8AC*, HCLJW*, KC4USA*, ZC3AB*, XW-

PZ1AP, CR8AC, ULTKBA, 5A1TV, CR6BX, VK0TC, HESLAE, HL8KS, CS8AD, VQ5GJ, VQ-4KRL, HZ1VB, VQ3CF, VP0PJ, 21Z: UA-0KTD, UAGRA*, VQ3CF*, VQ8AP*, SV0WR*, VK0AB*, 5GM: VU2DR*, EASFK*, 4X4JT*, UP0LT*, UA0KKB*, 3ER: SM8BYG/MM*, JA2AB, Ian Thomas: KM0DA, KR0ES, BERSH9: HZ1AB, HZ1VB, LX1AS, OD5LJ, KP5AL, QOSIE, MP4BIE, OY2M, PY4AO, PIRRS, SUIDI, URAU, UH8BA, VUZNA, VO1DX, ZC-3AB, SV8AO, 3X4JU.

14 Mc. Phone—ZACK: PYICK/0*, CR8AC*, HVICN*, ZAGH: VK9RG*, VR3A*, YS1JR*, ISFL*, ZK1BS, ZK2AD*, 3AME: T98AL*, VK0AS*, HCLJ*, VRDCC*, VK9AD*, ZL-3AC*, CEBL*, BV1US, FURAD, 5A1TV, UA-04DM, O4AIGY, VU2DB, VR4B, HZCCL, VU-2RM, KP4GN, PY4AJN, 11Z: VP0DC*, VU-3ABH, HHHH*, EABY*, HZ1AS, STUUS, VK0AB*, CEA0G*, 3A0M: CT1PK*, G8ML*, HZCCL*, HZ2R*, KR0BN, KR8LB, VK9AD*, VR4DA*, VR3A*, 4D0: BV1US*, BFL*, ZD-6DT*, 45TYL*, CESHJ*, XV5A, 8GM: VK9Y*, VR2DA*, VK0KT*, ZS6UR*, MP4BIC*, VK-0TC*, KAUSA*, YS1JR*, VSJUL*, KR4DO*, 3WP: 4X4DR*, 4X4CB*, C08K*, HVICN*, SV1AE*, FASUP*, EABY*, SV0WP*, ODSBV*, VY5AC*, ZETU*, O4AIGY*, CN8MM*, MP-4KAS*, 5A1TV*, VR4B*, B. Smyth: TIEG, TI2CA, TGBAL, VR3A, VR4B, VK0KT, ZD-6DT, 5A1TV, HPIPL, VU2AV, LUZHA, YV-



Does this make you drool a bit? It is Dick KV4AM seated in his shack. He has two of everything, drivers, finals, s.b. exciters, etc., plus 3kw. gas generator. On the top shelf: spare electronic key, speakers, ant. couplers. Middle: HT-32, B. and W. 518B, Collins 310-B, HT-33 amp. Ranger. Table: Audio keying speaker, 100-101, El-bug control, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

5CD, CN8MM, O4AIGY, MP4KAA, HC1FG, XQ-5AB* (see QTH). BERSH9: BV1US, EASGH, ZS8RB.

21 Mc.—ZAGH: OHZVU/0*, 3AIR: KL7*, W. 2AMB: O4AIV*, FURAD, VR2DF, VR3A, 2QL: OHZVU/0*, YN1AA*, JT1AA*, ZC4IP*, VQ-4LQ, MP4BIE, VK9Y*, ZL2 21Z: CN2BE, IJAKAA*, VS4JT*, DUIGF*, VK9BS*, UQ-2AN*, FASCB*, SV0WS*, VU2ET*, ZBIGHU*, and Europeans: ZZE: GCBF*, HA1KSA*, SPLV*, VO3RA* and the regular Europeans.

28 Mc.—3AIR: W. 2QL: W. VE*, KH6*, 4X1: HP1QD*, COJIK*, HCLJ*, VP5EM*, VP0DC*, HC1PS*, XE2P*, 901Z* (midday, long path). G. W. VE*, GD*.

QSLs RECEIVED

A large and interesting batch of QSLs have been received by the VK3 gang during January, with increased confirmations for DXCC. 3AB: VR3C, 3ACX: HVICN, SV0WR, ZSIC, 3WRA, 3AGH: YS1JR, UA4FE, UA0KKB, CR-8AC, ZC4IP, FFA8S, UB5UV, WU0U/K8S, 3WRA, SV0WR, TGBAD, 3AIR: W4FCB/K84, HZCCL, UDEKAB, UP2AT, UA0CM, UBAK, CT3AB, VP8CW. 3AMB: VK0AB 1 and 14

Me.), HK7AB, CN8GL, LU8RAJ, FM7WT, FY-
TYF, FABC8, SP6KBE, FB8ZZ, EAPBK, EA-
RCC, HC1HL, UBSUW, LA5Q 20W: 3W8AA,
UA1KAE 20L: ZB1CB, HA8BA, ZD2PC, ZH-
8KAA, BV10S, UC5CB, UA0ON, UQ6AA,
4X4DR, 4X4BX, 954CH, ZS8AG, ZJ3Q, WU0U/
K56, K4MAL, FFA8S, UA1KAE, UL7HB, UQ-
2AQ, UMAAA, HB8H8, CR8AC, 884DW,
HR1IH, KZ5RF, PY1BF, UA4SF, UB3FD,
ZD6RM, EHB8C/MM.

QTH OF POSSIBLE INTEREST

HS1C—Box 1028, Bangkok.

VP8CW—QSL via I.S.W.L.

VR5A—Box 2, Tonga (3CX).

HZ1VB—Box 167, Jeddah, Saudi Arabia (4DO).

9G1C—University College, Accra, Ghana

(4XJ).

XQ8AG—No. 7 Vanguard Station, C/o U.S.A.

Consulate, Antafogata, Chile.

15FL—Box 90, Mogadiscio.

Before I finally wind up the cat and put out the clock, Hans 1AHH has asked me to pass on his 73 to all VK DXers. On my return from holidays there was a Xmas card and letter waiting for me. Hans gave no indication when he may be back, but as he holds a supervisory post in the I.G.V. organisation on Ionospheric research, which is keeping him on the move throughout Europe, I should say that we won't see him until the end of the I.G.V. task, although he hopes he may be on with something QRP in his travels. He is not out of touch completely as he gets his copy of "A.R." although almost three months old.

And so my thanks to the following, some of which is welcome "new blood!" 2EG for his regular QSP of 0AB whilst Chas has been at Mowson, 2ACX who now has the fine total of 262e worked, 2AGH torn between trying to take the hands for the good ones and build a new tx, 2AIR is wondering when conditions will stabilise (ask Hans Alan), 2AMB still able to dig out the occasional good one and pleased with the QSL he is getting, 2JJ who is trying a quad on 21 Mc. and we welcome his first contribution, 2OW waiting on three QSLs to confirm his W.A.S., 2ZR added two new ones for the month, 8CX who is happy with his cross-band with ZLIABZ, 4DO who is having some QRU trouble, 4XJ who manages to scare up something satisfactory on 28 Mc., 3AOM whom we hope to see regularly listed on the page, 5BK for his QSP of 5GM and SWP, 2ERS192 has now reached a total of 226 confirmations, Barney Smyth is interested in aeriels, and finally we welcome to the page Ian Thomas of Clayton VK3.

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. Cnt- No. rises	Call	Cer. Cnt- No. rises
VK3ATN	26 204	VK9DB	31 161
VK4FJ	21 202	VK4WF	16 160
VK3ATN	12 192	VK4WB	23 137
VK6RU	2 191	VK3JD	1 155
VK3BZ	3 176	VK4KS	9 152
VK3EE	10 163	VK6RW	4 150

Amendments

VK4DO .. 20 123

C.W.

Call	Cer. Cnt- No. rises	Call	Cer. Cnt- No. rises
VK4FJ	29 234	VK3XU	48 213
VK3FH	15 226	VK3BY	45 202
VK3JB	10 224	VK3ZD	2 191
VK3CX	28 222	VK3YL	39 190
VK3BZ	6 222	VK6RU	18 176
VK4HR	8 218	VK6RX	23 176

Amendments

VK4DO .. 20 151 VK4RW .. 47 145

New Members

VK2AIR 60 102

OPEN

Call	Cer. Cnt- No. rises	Call	Cer. Cnt- No. rises
VK2ACX	6 239	VK3JE	12 210
VK4FJ	12 236	VK3ATN	69 210
VK4HR	7 233	VK3HG	3 201
VK3BZ	4 231	VK2NS	16 195
VK6RU	8 221	VK3DB	59 182
VK3XU	61 221	VK4RW	52 179

Amendments

VK4DO .. 15 175 VK4WF .. 40 165

PREDICTIONS FOR MARCH, 1958

Me. K. AUSTRALIA — W. EUROPE S.R. Me.

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— GMT 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — W. EUROPE L.R.

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — MEDITERRANEAN

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — N.W. U.S.A.

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — N.E. U.S.A. S.R.

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — N.E. U.S.A. L.R.

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — CENTRAL AMERICA

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — S. AFRICA

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

E. AUSTRALIA — FAR EAST

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

W. AUSTRALIA — W. EUROPE

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

W. AUSTRALIA — N.W. U.S.A.

0 2 4 6 8 10 12 14 16 18 20 22 24

45 ————— 45

28 ————— 28

21 ————— 21

14 ————— 14

7 ————— 7

W. AUSTRALIA — N.E. U.S.A.

0 2 4 6 8 10 12 14 16 18 20 22 24

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21 ————— 21

14 ————— 14

7 ————— 7

W. AUSTRALIA — S. AFRICA

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Unprecedented events marked the past month's activity on 50 Mc. VK3EF heard KH6, W9 and K9; VK4ZBF swapped calls with KERNQ; VK2-3-4-5-7 worked into JA; auroral contacts from VK3 to VK2 and 7; KL7 heard in VK3. What more is required to set the gang in all States on edge, waiting for the next break-through to who knows where?

Here is the sequence of events from the information to hand. Jan 11, 1700 E.A.S.T. for about 10 mts. VK3EF heard K9BUL on 50.2 Mc., R4 S3 with quick flutter QSB on the signal; during the same period on 50.23 and 50.24 Mc. a W9 and a K9 were heard in quick QSB conditions but enough of the signals were received to allow confirmation of the prefixes. By 1715 E.A.S.T. the signals had disappeared. VK3EF was using a 4 el. beam 45 ft. high with gamma match to co-ax line feeding into a 6BQ7 cascade r.f., 6U8 osc. mixer, 6SN7 cathode follower to 30 meg. i.f. through pre-selector to a 7SA3 receiver. Unfortunately no transmitter was on hand to go back to the stations heard. Jan 23 at 1020 E.A.S.T. VK3ER (Eorham) contacted JAZZW, the first recorded VK3/JA contact ever.

Feb. 2 had two openings, northern VK to JA and southern VK south. JA signals poured into VK3 for several hours and many of the local gang made their first JA contact on 50 Mc. VK4HM was apparently putting an excellent signal into JA going by the dopple which developed on his frequency. That is one feature of JA operating, they way their v.t.o. onto the station they call. At 1140 VK3 had a short opening to VK5 and while this was in progress VK1AB proceeded to contact JAJAXE at 1155. Each was RS, SS, to the other though they lost one another in the end after a good contact. With Doug. TAB located

in Hobart it will take a contact with Macquarie Island to give the JA's a longer distance. In the evening VK3 had an opening to VK5 and ZL with an extended opening to VK1. Again here many VK3s made their first VK5 contact. With so many signals coming in from the south, the VK3 beams were swinging madly from ZL to VK5 through VK7 and back again. During this period VK3OF sat on one signal (1908 E.A.S.T.) and identified it as VK4AA calling VK3MCK. VK3A having left Macquarie Island (replaced by OKT) the query now is "was it JAAAA off the back of the beam?" Was JASAA one of those worked by the VK3 gang? During this same evening VK5 had an excellent opening to JA, the first ever once again. According to the A.B.C. News service the following morning, Col BRD worked 11 and Reg SQR contacted 4. Maybe others were in on it too.

Feb. 5—Gerry 5ZBN at 2047 E.A.S.T. heard a KL7 calling CQ VK or JA. A strong local signal made copy difficult at times, and also having a sharp scatter flutter/fade on it also. At 2100 on approx. 50.1 a similar type of signal appeared for a short period but the rapid QSB made identification impossible.

Feb. 8 at 1045 VK4ZBF listened to a signal which signed KERNQ. Allan called to be answered as VK3EFB, but after several efforts was correctly identified before the signals went out. It is not known whether signal reports were exchanged by each station, though the calls definitely were. Allan was using a mere 8 watts to a 2 el. cubical quad, his final being a 22Z. Receiver was a 6AK5-658 converter into a 5-6 Mc. Command receiver. Unfortunately while this was going on Allan was the only VK4 on the band. How about going QRO Allan? During this period the ZLs were steadily working across the Pacific to the west coast of W land. Once again both first, VK/W, ZL/W.

Feb. 16 in VK3 at 2145 E.A.S.T. weak signals from the north came up on the band, at 2210, Ian 3ALZ raised his first JA. Ian went on to work 4 more while the rest of the gang called in frustration to no avail. The first meg. of the band was full of JA signals to ST, but copy was difficult because of the sharp QSB flutter coupled with language difficulties. A terrific dop-ple developed on Ray 3ATN (Birchby) while 3ZCW (Guyen) appeared to be in the thick of it also. General consensus of

opinion was that it was a "scatter" type of opening.

Feb. 11 provided an anti-climax as well as some amusement for the VK3 gang with an excellent auroral opening. With VK3-3-5-7 all beaming south at the aurora, VK7AB/VK7LZ broke the ice with an intrastate contact, followed by VK7/VK3, VK7/VK2, VK3/VK2, with VK3 calling VK7 though no sign of him in VK3. Signals between VK7/VK3 peaked 9 plus at times allowing phone contacts, but for the most part c.w. was the obvious choice. Signals such as those on the band had to be heard to be believed. All d.c. characteristics were lost, c.w. sounding like a square toothed buzz saw gone mad. Even strong S9 plus local signals developed the auroral effect, ground waves being conspicuous by their absence. VK3/VK2 contacts were by phone, difficult copy at times; hope the Z call boys are out to get their full tickets, they would get a lot more contacts under auroral or fringe conditions. Col TLZ alerted Len TBQ by landline whilst Doug TAB started off on phone without any method of keying, but speedily rectified that, it did not take him long to pound brass.

SKEDS AND THOSE TO LOOK FOR

VK6KT, Macquarie Island, runs automatic c.w. on 50.19 Mc. beaming north, calling and listening in a sequence of 3 minute periods on Saturdays and Sundays at these times E.A.S.T.: 1205-1220, 1500-1530, 2000-2020, 2100-2130. Up and down the VK east coast various Hams are running skeds with KH6 and W around 6700 E.A.S.T. VS2DQ on 51.2 Mc. is looking for VK contacts so tune up that far if you can boys, while XE1GE just inside band edge, with high power and a good location is beaming at VK also. With so much interest being displayed overseas in the VK direction and conditions as they are, there should be opportunities for everybody before the band closes up. Of interest is an extract from a letter received from Vern 4LK. From JAZZW (Jan. 30) he has worked KL7, VE7, W6, 7, 0 on 50 Mc., all this taking place in the morning from around 8 a.m. to 8 a.m. Jap. C.S.T. (0900-1900 E.A.S.T.). JAZZW, who does not work (apastic), has had over 100 contacts with the west coast of W land and Canada. Another first overseas was W1CWS to R4HJL on 50 Mc. on Jan. 25, believed to be a single hop contact (1830 G.M.T.).

VK8 appear to be out of all this (lack of news to date) but with the activity evident in South

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FEDERAL

CHANGE OF FEDERAL SECRETARY

Federal Executive Committee is pleased to announce that for the next six months, Bob 1234K, VK3RJ, will be "taking over" the duties of Federal Secretary of the Institute.
This change is necessitated by the fact that the present Federal Secretary, Doug Bowie, VK3DU, and his XYL are making a world tour in the near future.
Bob 1234K, VK3RJ, is 40 and 80 metres and can often be heard during the week-ends.
For those wishing to contact Bob, his phone number is FJ 3521 during business hours and FJ 5952 at other times. As usual, all mail should be sent to the postal box—No. 2611W, G.P.O., Melbourne.

VKS FEDERAL COUNCILLOR

Word has been received by Federal Executive that the Federal Councillor for 1958 will be Mr. Rex Richards, VK3SD. Rex will be taking over from Mr. Gordon Bowen, VK3XU. All members will support Executive in saying thanks to Gordon for his fine work during the past year, and for his fine efforts in the Division and by means of the broadcasts over VK3WV. Gordon has been able to maintain contact with members and Federal Executive and then into action. Besides this wise council at the last Convention will be well remembered.

How VK3 are extremely fortunate to have another very able member to follow in Gordon's footsteps. Rex has had experience in Conventions and then as Manager of the Federal Contest Committee, he has been able to gain an insight into the Federal sphere. Executive is happy to say a very big "thank you" and an equally big "welcome".

VISIT OF VK3 FEDERAL COUNCILLOR

A welcome visitor in Melbourne during the last couple of months was the VK3 Federal Councillor, Russ Coleman, VK9KX.
During his visit, Russ was able to have a discussion with Federal Executive. As a result various aspects of problems confronting the Institute have been given consideration.

FEDERAL QSL BUREAU

Please note that the complete address of the Greek QSL Bureau and which should figure on all correspondence addressed to SV Amateurs is: 25 Athens, Manager George N. Zarifis, Box 564, Athens, Greece.
A new award from Japan styled "The DC-25 Award" and sponsored by the Japan Double

Call Club is unique and interesting. The certificate may be claimed by any licensed Amateur who submits proof of having worked 25 double or triple call sign stations. Example: JA1234, G5KX, VK3WV, WB8B and 20 on. Contacts must have been made AFTER JULY 30, 1952, and the submission must contain at least one or more either phone or c.w. Send QSLs with a check list and 10 I.R.C. to Double Call Club, JA1CC, Akira Asano, 257 Eitoku, Sugimori, Tokyo, Japan. The QSLs after checking will be returned by registered mail together with the award. The award is also available to s.w.'s.

The correct address for the Indian QSL Bureau is Box 334, New Delhi, India. The old Munrar address must not be used.
Once again the well known Helvetic 23 Contest is coming up. The U.S.K.A. has scheduled it for the following dates: 1500 GMT May 17 to 1700 GMT May 18. The object of the contest is for stations outside HB to work as many stations in each of the 23 Swiss Cantons as possible. All Amateur bands may be used for c.w.-c.w. or voice-voice contacts, and the usual serial exchange is to be made. Three points are earned for a contact with any Swiss station on each band. The total points earned on all bands are multiplied by the sum of all Cantons worked on c.w. phone or both together on all bands, hence the maximum multiplier possible per band is 44 c.w. or 23 phone. Entries must be submitted on separate sheets for each band and

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.



A.R.R.L. DX COMPETITION—

Dates: Phone—March 7 to 9; C.w.—March 21 to 23.
Times: 2400 hours (7th, 21st) to 2400 hours (8th, 22nd) A.T.T.
Cypher: RST followed by power input e.g. RST 50975 for c.w., 57100 for phone.
Scoring: QST, January, 1958.

REMEMB. DAY CONTEST—

Dates: Saturday, 16th August, 1800 hrs. E.A.S.T.; Saturday, 17th August, 1200 hrs. E.A.S.T.
Rules: See amendments, February issue.
Voting return date: 31st March, 1958.

Zone Correspondents: Maryborough: R. J. Glasco, VK4BG, 80 North St., Maryborough; Tawaville: R. K. Wilson, VK4RW, Hogan St., Stuart, Townsville.

SOUTH AUSTRALIA

President: W. J. Bulling, VK3KH.
Secretary: B. W. Austin, VK3KJ, Box 1234K, G.P.O., Adelaide. Telephone: UX 2621.
Meeting Night: Second Tuesday of each month at 17 Wymouth St., Adelaide.
Divisional Sub-Editor: C. Daw, VK5EF, P.O. Box 44, Gawler, S.A.
QSL Bureau: G. Luxton, VK3RX, 27 Belair Rd., West Mitchell, Box 11, Benculue (Inwards & Outwards).

WESTERN AUSTRALIA

President: J. E. Rumble, VK6RU.
Secretary: J. R. Elms, VK6BE, Box N1002, G.P.O., Perth, W.A.
Meeting Night: Third Wednesday of month at Perth Tech College Annex, Mounts Bay Rd.
Divisional Sub-Editor: E. J. R. Cowles, VK6EF, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: F. J. Evans, VK7JF.
Secretary: M. Hurlbut, VK7AH, Box 371B, G.P.O., Hobart.
Meeting Night: First Wednesday of each month at W. H. Clubb, 147 Liverpool St., Hobart.
Divisional Sub-Editor: W. W. Watson, VK7Y, 38 Brookier Ave., Moonah.
QSL Bureau: K. A. Johnston, VK7RX, 34 Tower St., Wynyard.

PAPUA—NEW GUINEA

President: F. N. Nolan, VK9FN.
Secretary: N. T. Casey, VK9NT, Box 294, Port Moresby.
Divisional Sub-Editor: R. Clark, P.O. Box 204, Port Moresby.
QSL Bureau: R. Lloyd, VK9ZAL, Box 204, Port Moresby.

contain the usual contest declaration. Certificates to the two highest scoring entrants in each country. Last date for mailing log is June 7 to U.S.K.A., HBNI, QSL Manager, 1234 Main St., New York, N.Y. 10001. We do not state how the separate Cantons are distinguished and the result sheet of the 1957 Contest does not list a single VK entrant. Following on the theme of the short February "A.R.", it is advised that Doug VK3RJ is now operating from Mawson. The rest of the boys will probably be working from there.

—Ray Jones, VK3RJ, Manager.

FEDERAL AWARDS

W.A.V.K.C.A.

VE6V, W8ABA and G8KS have been issued with W.A.V.K.C.A. Certificates. The total number of certificates issued was 71 only.
Gordon Weynton, VK3XU, Manager.

NEW SOUTH WALES

On Friday, 24th January, members who attended the monthly meeting of the N.S.W. Division had a very interesting evening. A lecture on the design and construction of transistors was given by Mr. Max Hull, VK3ZS, our Federal Vice-President. The lecture was the order of the evening. Mr. Hull discussed the design and construction of various applications in which they could be used. By the use of slides the various methods of using transistors were described and comparisons made with similar circuits using conventional type valves. Several types of transistors which are not yet available in Australia were also described. At the conclusion of the lecture many questions were asked by members and Mr. Stevenson very capably answered. A hearty vote of thanks was moved by Bill ETT, who came down from Newcastle to attend the Convention at Durai.

The Chairman introduced Mr. Max Hull, VK3ZS, to members. Max then spoke on various phases of Federal Executive's work in Institute affairs. Many points on the magazine "Amateur Radio" were discussed and several suggestions made by members were noted by Max who assured them that he would refer them to the Magazine Committee on his return. Federation of the Institute was also mentioned but although it was not clear what problems would have to be solved, it was conceivable that many suggestions would be gained. The necessity for the Amateur of Australia to be represented at the International Telecommunication Union Conference at Geneva

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National Field Day, set up at Ghost Hill, Flaiba, and made some good contacts. He has also built a pre-selector which has brought up DX signals two S points. 4BG now has a new converter, and is sending and receiving DX on that band. In addition he is re-building grid dipper for extra bandwidth in order to adjust the circuit and bandpass. He is also to Noel Bignell, still at school, on getting his limited license. Get started on that c.w. Noel, so that we can hear you on the c.d. bands.

TOWNSVILLE

The Annual and General Meeting was held at the residence of 4BX and quite a large number of members were present. Although a few of the old timers were amongst the absent, nevertheless it was heartening to see a few new members roll along for nomination to the club.

The retiring officials were again duly elected, and the Chairman and Secretary stating that this is their last term in office and some of the younger ones had better get ready to step into their shoes. Pat 4ZB informed the club that the R.A.A.F. club was starting classes and issued an invitation to associate members to come along. Morris would also be attending the classes, and expressing willingness to attend for morse and tuition in Radio. Many thanks Pat.

The retiring balance sheet and the balance sheet and all were relieved to find we were not in the red. Joe 4JH promises to give us a long awaited letter in the near future. Down at last. My apologies to Harry 4ZP at Sarina for not meeting him in Mackay as promised. Truth is the wife would not let me go that night and I was sorry. Eric 4EL and Len 4SD chasing the Europeans on 10 mX each evening, closely watched Harry 4ZP and John 4DD. John going on holidays to Sydney and on the look out for parts for the gang. Bits and pieces hard to come by. The beam down at the beach, the beam due to birds building and hatching their eggs. Vern 4LK had a few hurried visits in course of business and no budding prospects for the summer. Shuffling shifts to new QTH away from QRM. Bob 4NG watch out now. Bob 4TK also sends along news.

A Christmas morning hook-up on 1 Mc, had Basil 4ZW, Harry 4ZP, Vic 4BJ, Bob 4TK, Vern 4LK, Alex 4MA, Frank 4FC, Claude 4UX and Frank 4FN. Andy 4BW was missing due to a cold. Basil 4ZW and Harry 4ZP were Douglas where he listened each day on sked time. Also spent some time at Atherton as guest of Harry 4ZP. Harry 4ZP was on duty was held on New Year's Day. Alex at Mt. Garnett spent part of his holidays in Cairns and spent the last few days at the beach. Basil 4ZW in re-arranging his new rig. Basil crushed his little finger while doing chores around the house. Bob 4NG called on a few of the old timers in the north and south and operated from some of them. Gordon 4GH of Maryborough was also a visitor to the north and called on several of the gang en route.

Harry 4HK and Bert 4BP have joined the morning or afternoon hook-up on 40 mX at times. Likewise John 4DK, while Don 4PW has been heard since his return from Rocky on leave. Lennie 4FF has a new rig, a 400 watt, smart efficient and rotatable beam for 50 Mc, and has new converter for his rx also. Why not try for a Z call sign Agton? Bob 4TK finished his all-band rig which has a multiband coupler. Tom 4TT and Andy 4BW in a 3-way with Eddie 50W on Darby. The 400 watt Beautiful Band of WNT getting settled in at Rabaul and expects his cases of junk to arrive from Mareeba at any time. The 400 watt Beautiful Band of WNT got holidays and developed a passion for Nth. Qld. mangoes. While Harry 4ZP does the same for watermelons during the hot dry spell. 400 watt Beautiful Band of WNT approaching the 1,500 mark. Ted 4MH (Cairns) comes on the air from time to time. Rumor has it that Ken 4ZV is moving to the north with his gear up for sale. Want to see some surplus gear just call on Bill 4XMH. He has a house, no kidding.

SOUTH AUSTRALIA

There just cannot be many growls or complaints in our Division these days, because at the last get-together general business was at a minimum and the weather was so good throughout, so that within the hour of opening the meeting, President John was able to hand out the money and have the types, 4BY and 4BY and Norm, to conduct the "Tender" programme. This they did with great gusto and the amount of gear that changed hands was amazing. It was as if it did not exist. Keys (complete with dust-for shame) to complete units.

These nights are usually well attended and this one was no exception. In spite of the fact there was a fair carry over, some of which went by private treaty and went away in new hands.

Our membership is still growing, 7 new associates, and 2 new full members being added. There at the last meeting, a few conversions imminent too, when last exam. results are known, so Norm gets it both ways, or he gets you both ways, but in the mean keep coming. Congrats to the new faces, hope you enjoy the fraternity of membership.

The January holidays saw the annual picnic function again. This time was Tree Gully being chosen, which turned out to be a really good choice, for it was apparent that all who attended enjoyed the picnic. The weather was in fact as good as a picnic as we had ever had. Whether it was the compact nature of the facilities of the grounds, the weather, the programme, or the organisers, something or a combination of them made a very friendly and enjoyable atmosphere, that gave the proceedings a swing that must have delighted Norm, Frank 5MZ and Luke 5LL, all of whom really put a lot into the show. We missed Joe and 4FO and 4JH, but I think the weather at home could not make it—hope all well again now Joe.

The presented the items were perhaps illuminating in their way, for instance XYL of Treasurer Jim SFO proved that she could throw a ball, and did it well, and she also could run and duck well, whilst my XYL, who came second in that event, caused me some alarm—I'm now taking running lessons, to hand the baton to the DX'er.

They had us taking needles, running bare footed over three-corner jacks, putting other blokes in and finally playing cricket and in the latter event that portly character no less than "Pansy" (Aga Khan) 5FS was started, he didn't mind the sledging, in fact it was considered his fillers were wrong somewhere in that a fast one from John 5ZBA just took running like any vigorous Ham would.

Phone once again cleaned the c.w. out, there being no need to quote scoring, that would be too long to put in. The weather was in a couple of scorers who obviously do not confine their playing to W.I.A. picnic days.

Some hidden talents of a few of the younger members came to the fore, and it was good to see them in action. The final scores were c.w. all out for 38, with phone 5 for 116.

The 400 watt Beautiful Band of WNT did not the children miss out, "Uncle Frank Bentley" had a host of novel items and ideas, including an antenna and pole, which he caused a riot and a good supply of minor prizes and plenty of ice-cream. The doll in the ice competition was won by the great granddaughter of a dear old lady, who 20 years of age was present and enjoying the proceedings, the little girl being John Hazeldine's youngest.

An inspection of the car of Len 5OC disclosed a spade (or shovel—depends on your point of view) and it was considered that the one he uses to dig them out of the QRM with, whereas in fact it is used to gather suitable garden soil. A trick being that he tells him to get out of the entry fee is a bag of dirt—reason—he lives on a hillside where nature has denuded the rocks of the soil and poking the dirt into the ground.

By the way, it is possible that Len has the only set-up where the antenna leads go down through the ground and the feed line goes up which happens as a result of solid hillside.

Bob 5BG has another unique set-up, his ant. being close to a b.c. vertical and he has 1 amp. of current, and a 400 watt Beautiful Band of WNT feeders and his own r.f. going up (quantity not quoted). What about beating something against the antenna and poking the bands on Bob—you might make history!

The Gibber boys at 5WC are still on the ball. Pat GIBKX recently joined the team with a couple of others and a c.p. and so get your b.f.o's on chaps and be in it. Ron 3FY building a new 50W rig around a Geloso and he tells us it will have plate and screen modulation, this time, good for him, better for us.

News from the South east tells that Col. 5CJ and 5MC and a c.p. and a c.p. and a c.p. the gang at Gambier, took the form of a visit to the shack of 5CJ where a very enjoyable evening was spent. The evening was the part played by Mrs. 5CJ in providing an excellent supper. The appetites of the chaps being the proof of the evening's success. The evening dealing with noise limiters, etc., was well received by the chaps also, and their thanks to the Division in making the tapes available.

John 5JA still off the air, for shame, for it's the one-eyed monster that still occupies his

time. Erg 5KU heard occasionally on 20 c.w. Stewart 5MS pokes out signal on 20 now and again, his daughter recently returning from U.K. with personal news of some of Stewart's G contacts.

TASMANIA

NORTH WESTERN ZONE

A record meeting was held at Burnie during February at the QTH of our President, Sid TSP. Twenty-four members were present, no lively discussion took place on the pre-forma circulated by the Noise Location Committee in Hobart and it was decided to hold a 3-hour listening watch on Sunday 9th February from 9 a.m. to 12 midday in an attempt to correlate noise on the N.W. coast.

A practical demonstration of the Hon. Secretary's new coil winder followed after the meeting, and Ted TEJ performed his usual task as auctioneer.

The highlight of the evening was the supper provided by Sid's mother, assisted by his sister, and the presence of Roy TRN, Mrs. Bob Wilson and Miss Phyl Greaves. The usual comment applies and Sid should be able to get serious about this Ham business, cakes for at least a fortnight. Congratulations Sid's round.

Sid's law, Sid also created some interest, particularly when Ken 7AI knocked a wire off somewhere and we had sound but no picture.

Understand Ray Schultze, a Devonport associate, has purchased a new car. Study on Ray and you will be able to push the key to "TX" before long. Associate John Lee is getting very serious about this Ham business and has obtained a pair of poles with the aid of a couple of bullocks. Believe bullocks will be used to erect such a structure.

Allan Baptist is receiving tv. sound and Although Allan has no working tube, the beam on the roof tops has given him increased social status in the town. The witness street appears to be proud of it.

Lee TCK heard by Sec. Max calling his home. Since YKJ recently had no trouble was found out later Lee was calling on 20 mX.

Ken 7AI trip down South recently, worked portable from Hobart and was heard by Myles TMF on King Island. Thanks for report Myles. Victor 7KA and found out by report Myles. Sounds like a 4. This is a good thing, some work there Ken, and what about going into commercial production for beams, or do I remember you going into agency work?

Burnie associate Ken Brown seen at the local auction again; bought a telescope for 30/-, an oscilloscope for 20/-, and a Ken Associate Terry Tong also visiting auction. That ARS was too dear anyway Terry.

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Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month and acceptance must be given advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

FOR SALE: Eddestone 750 Receiver as new, had very little use, £100. Also a quantity of unused Ham gear including unused parts for a 1,000v. power supply, a Tecnico N80 crystal mic, an 813 valve and a host of other valves and equipment. Leo R. Dwyer, Newry, Gippsland, Vic.

FOR SALE: Ideal Mobilcar, 4-wheel drive, ex-amphibious Jeep; 12 v. 60 amp. gen., excellent throughout. Reg. Sept. P. Ward, Highton, Geelong, Vic.

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0.1/200	1/2
0.1/400	1/9
0.1/800	2/0
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1 x 12 x 1	13/0
1 x 12 x 2	23/10
1 x 12 x 3	31/4
2 x 4 x 3	24/10
2 x 6 x 1	11/7
2 x 5 x 2	17/10
2 x 5 x 3	24/10
3 x 3 x 1	11/7
3 x 3 x 2	24/10
3 x 3 x 3	24/10
4 x 2 x 2	17/10
4 x 2 x 3	24/10
5 x 2 x 1	13/10
5 x 2 x 2	23/10
6 x 2 x 3	31/4

RECORDING TAPE

BASF 1200 7 in. reels	67/0
BASF 1309 6 in. reels	65/0
BASF 1700 7 in. reels	95/0
Cosmo Hi-Fi 1200 7 in. reels	50/0
Philips 1200 ft. 7 in. reels	95/0
Scotch 300 ft. 5 in. reels	28/0
Scotch 300 ft. 6 in. reels	30/0
Scotch 1200 ft. reels	70/0
Westinghouse 1200 ft. 7 in. reels	65/0

TEST EQUIPMENT

Advance Q1 signal gen.	£26/9/3
Telecheck and marker generator	£158/17/6
Palec MX47 20,000 ohms multiplier	£29/13/0
Palec M32 10,000 ohms per volt multimeter	£17/18/0
Palec ET44 valve tester	£7/15/0
University TVR-EV electronic volt meter	£42/0
University TV30 30kV. probe for TVR-EV	£8/5/0
University TV5 crystal RF probe for TVR-EV	£2/5/0
University TV7 valve RF probe for TVR-EV	£7/5/0
University TVR-PG pattern generator	£60
University B.T.B. dry battery tester	£16/10/0
University U.B.A. uniscope (resistance and capacitance tester)	£34
University MVA2 AC/DC multimeter	£17/10/0
G.R.A. de luxe test leads	16/3
Lab. probes	16/8
Westinghouse meter rectifier 5	35/0
Westinghouse meter rectifier 1	35/0
(All prices subject 12 1/2% tax.)	

SOCKET PUNCHES (Hammer or screw type)

1-3/16 Std.	43/4
1 in. Carr. Incoetal	39/3
3/4 in. Incoetal	39/3
5/8 in. button case	23/3
1/2 in. for pots, bezels, etc.	23/3
"BB" wire strippers	6/0

L.T. 53 Westinghouse 6/12V. 3a. battery charger rectifiers 79/0

Been to an ORCHESTRAL CONCERT lately?

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VITAVOX DU 120 DUPLEX COAXIAL FULL RANGE LOUDSPEAKER



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